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The Darkfield Diagnosis of Early Syphilis

• Max J. Exner, M.D., New York, N. Y.

THE effective strategy in the conquest of syphilis lies in the earliest possible diagnosis followed by immediate and adequate treatment by modern methods. By early treatment the patient can be quickly rendered non-infectious and kept so during the long period necessary for a cure. If every case could be brought under proper treatment early, syphilis could be stamped out in a comparatively short time. Treatment begun early, in the seronegative primary stage, offers the greatest chance for an arrest or cure in the shortest time, and for preventing the development of any of the serious consequences of the disease. Treatment delayed to the seropositive stage lessens the average chances for cure by about 18 per cent, and by 21 per cent when delayed until the secondary manifestations appear.

Inasmuch as the blood does not become positive for syphilis until after the early part (two weeks or more) of the chancre stage, the blood test does not serve us at this time when diagnosis is of greatest advantage. For diagnosis in the seronegative stage, the darkfield microscopic examination is our only certain method, enabling us to discover the living spirochete in the serum extracted from the local lesion.

Darkfield examination, while essential in primary syphilis, is also of advantage in diagnosing secondary lesions. In the Cooperative Clinical Studies, 94 per cent of darkfield examinations of cases of syphilis in the seronegative stage gave a positive result, and 91 per cent of examinations of secondary genital lesions of syphilis also gave a positive result.

It is, of course, of the utmost importance that these serologic and microscopic means of diagnosis be made readily available to every medical practitioner. They involve, however, complex and exact laboratory techniques which require, for reliable results, trained and experienced laboratory technicians. The equipment also is comparatively expensive and specialized. In the case of the blood test for syphilis these handicaps have been overcome by the device of sending blood specimens to the laboratory by mail, for which purpose special containers are manufactured and supplied to physicians by state and local health departments. The blood test is now fairly generally available and is increasingly used by physicians.

Since the darkfield examination requires special expensive apparatus and skilled technique it has been necessary to send the patient to the laboratory for the examination, a procedure which has greatly limited the use of this most strategic diagnostic means.

It was to be expected that syphilologists would give attention to the problem of making the darkfield examination more readily available to all physicians. While admittedly the sending of the patient to the laboratory, permitting the collection and examination of the specimen by trained personnel, is the most reliable procedure, the darkfield examination needed to be made available to physicians who could not send patients to the laboratory.

Experiments were undertaken to determine how long spirochetes remain viable and retain their characteristic movements and form in specimens taken from syphilitic lesions. As early as 1919 two investigators collected and preserved spirochete-laden serum in capillary tubes. They found recognizable *Spirochæta pallida* as long as 14 days after collection.

In recent years Surgeons J. F. Mahoney and K. K. Bryant of the Marine Hospital on Staten Island, N. Y., experimented with specimens taken from scrotol chancres of animals, preserving them in capillary tubes stored respectively in the refrigerator, at room temperature, and in the incubator. The specimens kept in the refrigerator and those at room temperature showed spirochetes of characteristic form and retaining a degree of motility after 96 hours and over. Those kept in the incubator became rapidly overgrown with other organisms. Motility decreases with the passage of time. The experiment was repeated with specimens taken from human syphilitic patients with the same general results. In one isolated case, motile organisms were found 13 days after the specimen was collected.

In 1932 A. L. McNabb, Gladys Matthews and A. D. McClure of the Division of Laboratories, De-

From the American Social Hygiene Association.

partment of Health of Ontario, Canada, experimented to determine whether a darkfield examination carried out on chancre fluid forwarded by mail would prove reliable. Four clinics situated from 150 to 1,000 miles distant were supplied combined outfits for mailing chancre fluid specimens and blood specimens. The essential equipment for the chancre fluid specimens was three capillary tubes for gathering and holding the fluid; a vial of a half-and-half mixture of vaselin and beeswax or paraffin for sealing the ends of the tubes; a glass tube for holding the capillary tubes; and a metal container for the outfit, which in turn was placed in a cardboard mailing case. The outfit included also two slides for taking smears of the serum for staining and microscopic examination, so as to utilize both of these complementary methods of early diagnosis.

Specimens shipped from the most distant points, a thousand miles away, were found suitable for examination, the spirochetes upon receipt at the laboratory retaining their characteristic form and motility. The darkfield examinations yielded 72.7 per cent positive results. This figure would have been much higher had not a number of specimens been submitted from non-venereal cases. The authors state that positive darkfield preparations have been obtained from chancre serum specimens after storage in the icebox for eight weeks and at room temperature for two weeks.

In another experiment these authors arranged for the shipping of a series of specimens back and forth between a laboratory in London and one in Toronto, the specimens being examined upon each arrival. After crossing the ocean four times in a period of 80 days, specimens were found still to contain motile spirochetes.

For two years the New York State Health Department has made practical use of the demonstrated feasibility of transmitting to the laboratory by mail specimens suitable for darkfield examination, and has made this laboratory service available to the physicians of the state. The department has furnished physicians a standard outfit for mailing specimens, consisting of capillary tubes for collecting and holding the chancre fluid; a vaselin-wax preparation for sealing the ends of the tubes; and instructions for taking the specimen, all enclosed in a mailing case. Since specimens from the most distant parts of the state are in the mail not over 24 hours, no difficulty has been experienced in keeping them suitable for examination so far as the time element is concerned.

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The greatest factor of uncertainty in such a plan lies in the possibility or likelihood of carelessness or inexpertness in taking the specimen. While the method is comparatively simple, it must be carried out with exactness and care. The pamphlet, "The Management of Syphilis in General Practice," issued by the United States Public Health Service, gives the following instructions for taking the specimen:

"If the lesion is covered with a crust or scab, remove it. Then wash the lesion thoroughly with a gauze sponge wet with plain tap water (no soap) or normal salt solution, to remove gross surface infection. This should be dried off, and the surface of the lesion abraded with a dry sponge (gauze), sufficient to provoke slight bleeding and exudation of serum. As oozing occurs, gently wipe away the first few drops, especially if they contain much blood, waiting for a drop of clear serum to appear. It is rarely necessary to squeeze the lesion."

In case the specimen is to be examined at once, the instructions are to touch a clean slip to the exuded serum and drop it on a clean slide. It is ringed with vaselin and examined promptly under the oil emersion objective, using the special darkfield attachment with the microscope.

In case the specimen is to be sent to the laboratory, the serum is collected in a capillary tube by holding the tube horizontally and touching one end to the exuded serum. The tube will fill by capillary attraction. The tube may also be tapped up and down on the lesion to assist the upward flow of the fluid. If possible, two or three tubes should be filled. The ends of the tubes are then sealed by pressing them into the half-and-half mixture of vaselin and wax or paraffin. The outfit provided by the United States Public Health Service, Division of Laboratories, contains a small tin box half filled with the vaselin mixture. The capillary tubes are laid lengthwise upon the mixture and pressed down beneath the surface, thus sealing the ends and supporting the tubes in transport.

In lieu of a standard outfit for mailing, one can be easily improvised. Capillary tubes can be drawn out over a Bunsen burner; the vaselin mixture is easily prepared or melted paraffin alone may be used; and the capillary tubes may be packed tightly with cotton in a standard blood specimen container and shipped in the blood specimen mailing case. They may also be packed in a small test tube for which a packing case may be improvised with cotton and cardboard wrapping. The necessary clinical data should, of course, accompany the specimen.

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Transporting to the laboratory through the mails specimens suitable for darkfield examination has been demonstrated to be just as feasible as is the transportation of blood specimens for serologic tests. The extreme importance of diagnosing syphilis in the seronegative primary stage suggests it as urgent that all state and city health department laboratories make the darkfield service more generally available through the provision of outfits for mailing, and that they undertake a campaign of education of the physicians with reference to it, including instructions for the proper taking and shipping of specimens. The general practitioner is as yet playing a wholly inadequate rôle in syphilis control. Here is one important step toward the performance of the public health function that is to be expected of him, to the enormous benefit also of his patients.

50 West 50th Street.

Calcium as a Preventive of Certain Diseases in Children

• Clara F. Di Benedetto, B.S., M.D., Assistant Visiting Pediatrician, New York Foundling Hospital, and Assistant Physician, St. Luke's Out-Patient Department, New York.

SINCE calcium is an element that is essential for the maintenance of life, it naturally possesses divers important therapeutic possibilities in addition to its indispensable physiologic properties. Some of the indications mentioned are purely empirical, while others are now well established both on experimental and clinical evidence.

The therapeutic indications for calcium may be divided briefly into two groups, first, those derived from the pharmacologic properties of calcium, such as decreasing cell permeability in hemorrhagic and inflammatory processes (1), (2), raising the threshold for nerve irritability and the alleviation of smooth muscle spasm; and, second, those arising from pathologic calcium deficiency, or from an increased physiologic demand which if not met would lead to actual deficiency. The first group of indications does not fall within the scope of this paper, and hence it is mentioned in passing without further consideration. Of the second, pregnancy and lactation in the mother, and the whole period of growth of the child, represent the two outstanding examples where the demand for calcium is greater than can be adequately supplied ordinarily by the daily diet.

Pregnancy and lactation produce metabolic states with an increased calcium requirement. A calcium and phosporus retention during pregnancy is established. Indeed, it has been shown that the amount of retained calcium during plentiful administration even surpasses the amount required by the fetus. A diet too low in calcium not infrequently leads to hypocalcemia, as has been shown by many researches. Such a hypocalcemia usually appears in the last months of pregnancy. The calcium requirement of the fetus increases from 0.006 Gm. per day during the first four months to 0.6 Gm. per day towards the end of gestation (3).

From these figures the daily calcium requirement of the fetus during the entire pregnancy may be calculated as 0.1 Gm., i.e., the mother has to turn over to the fetus approximately 30 Gm. calcium, a fairly respectable amount (4). Thus the occurrence of hypocalcemia toward the end of pregnancy is readily understood. According to Aub (5), a negative calcium balance is probably unavoidable during lactation. The importance of reinforcing the calcium intake throughout pregnancy therefore cannot be overemphasized.

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Decalcification of bones, softening and caries of the teeth, loss of strength and muscular tone, and nervous irritability are not the only symptom ascribed to calcium deficiency. Recent and interesting work, especially by Minot and Cutler (5), seems to indicate that there is a relation between eclampsia, hepatic insufficiency, and calcium deficiency. They report that almost immediately after an intravenous infusion of calcium gluconate (Sandoz) there is in many cases prompt cessation of convulsions, relief from headache, drop in blood pressure, and improvement in eyesight. Their results are substantiated on therapeutic and experimental grounds by the clinical reports of Salvesen (7), Kehrer (8), Lopez (9), Cantarow (10), Vignes (11), Rodecurt (12), *et al.*

Dieckmann (13) believes that in many cases the diet of the pregnant woman should be supplemented with calcium and cod-liver oil. He claims that patients receiving this combination will have less decay and softening of teeth and that the baby will be started with its proper store of calcium and be less liable to develop rickets. Cantarow (14) agrees fully with this view.

Sherman (15) and others advocate a liberal administration of calcium, particularly during the growing period of the child, since the growing organism not only requires more calcium with the increase in weight but also because the relative calcium content of the organism increases. Newer investigations emphasize particularly the well known dictum that of all the minerals calcium is the one we have first to consider in the selection of a diet for children.

The absorption of calcium is dependent upon a complexity of factors. In the foreground stands the proportion of calcium to phosphorus. The most favorable ratio is calcium 1 to phosphorus 1.5 and is that found in human milk. As a rule this calcium-phosphorus ratio is less favorable in other foods, as the following figures indicate:

	% Ca	*% P*	*Ca:P Ratio*
Human milk	0.24	0.35	1:1.45
Potatoes	0.10	0.65	1:6.5
Beans	0.13	1.00	1:7.7
Oatmeal	0.06	1.00	1:16.5
Meat	0.03	1.80	1:60.0

As compared with human milk these foods contain from 6 to 60 times as much phosphorus as calcium. The organism therefore has an excess of phosphorus in relation to calcium, as a rule. This natural abundance of phosphorus in the diet in relation to the meager supply of calcium and its inhibiting effect upon the absorption of calcium confirms the truth of the above dictum and proves the necessity for providing adequate calcium in diets for children.

During the past five years, the author had the opportunity to observe in her hospital practice the clinical course of eighteen women who had received prophylactic calcium regularly during pregnancy and the period of lactation. In this survey, clinical observations were made to note primarily the effect of calcium on the development of the fetus and on the growing child from the standpoint of prophylaxis of certain diseases during the first two years of life. A record of the observations made is noted in the following summary.

Summary

1. This series of eighteen women was studied from the fourth month of pregnancy. Three pregnant women began to receive prenatal care in the fifth month of gestation; four, in the sixth; five, in the seventh; and the remainder in the eighth month.

2. In addition to the usual rules and regulations of prenatal care, the expectant mother was allowed a diet consisting chiefly of milk, oatmeal, dried peas and lima beans, turnips, raisins, green vegetables, etc. (15). Calcium was added to the diet in the last trimester of pregnancy in the form of calcium gluconate, one chocolate flavored tablet of Sandoz (17) twice daily, to be chewed thoroughly and swallowed with plenty of water (18). Vitamin A and D needs were supplied by plain cod-liver oil, a tablespoon twice daily.

3. Clinically, no symptoms or signs of such abnormalities of pregnancy as pre-eclamptic toxemia, eclampsia, etc., were observed in any of these women during the course of pregnancy.

4. At the first visit, when the women reported for prenatal care, a thorough examination of the teeth was made. Dental pathology, noted in some of the patients, was promptly corrected. During the remaining course of pregnancy, the teeth were repeatedly examined for decay and dental caries. Such changes, however, were found always absent on examination of the gravid women throughout their pregnancy. Also, the patients complained of no symptoms relative to the teeth. These findings are in accord with those reported by Apperman (19).

5. In general, parturition was attended without difficulty or dystocia. In one instance, a breech extraction was performed and, in two cases, forceps delivery became necessary to facilitate labor. The remaining fifteen women delivered spontaneously, requiring only the usual assistance and care.

6. All of the children born were normal, full-term babies. Their weight and height ranged within normal limits. No general disturbance of bone development and growth could clinically be detected upon physical examination of any of these infants.

7. Incidentally, it is interesting to call attention to a case that, in the course of this survey, the author had casually observed at the hospital. This was a case of a stillborn that presented clinically and roentgenologically a classic picture of fetal rachitis or osteogenesis imperfecta. The apparent shortening of the extremities was due to multiple fractures of the long bones, although the skeletal structures seemed of normal proportions. The etiology of this condition is not known, but there is doubtless some disturbance of calcium metabolism (20). The latter seems to be borne out in this case by the history, which stated that the mother had received no prenatal care and had been on a diet extremely poor in calcium.

8. The excessive loss of calcium during lactation was prevented or corrected in these cases by the administration of one tablet of 1.5 Gm. calcium gluconate thrice daily and of one tablespoon of plain cod-liver oil twice a day. This provided the requisite amount of calcium necessary for the daily increase in weight of the suckling, particularly during the first few months of life (21). According to Macy (22), Hart and Steenbock (23), Harvey (24) and others, the cod-liver oil stimulates better calcium and phosphorus utilization and decreases their excretion in the feces.

9. The feeding of the newborn in this survey fell into three groups; ten were on breast feeding; five, on mixed feedings; and three, on artificial feeding. Twelve of these infants were periodically observed during the nine months of nursing, and four were seen from time to time for a period of two years. The administration of cod-liver oil or viosterol was begun in breast-fed infants in the sixth month and in the others in the first month.

10. In none of the observed children were clinical pathognomonic signs, such as the rachitic rosary, Harrison's grooves, pigeon breast, craniotabes and other findings characteristic of rickets found at any time upon physical examination. In six cases it was possible to study the long bones roentgenologically. Two of the x-rayed cases, both breast-fed, showed distinct osseous changes of a mild rachitis. Upon questioning the mother, it was learned that, even though the milk was adequate in amount, her diet was deficient in calcium, vitamin D and other nutritional elements. This observation concurs with the clinical researches of Toverud *et al.* (25), which disclosed that the lack of minerals and of vitamin D in the diet of the lactating mother lays the foundation for rickets in the infants.

11. Neither spasmophilia nor frank, active tetany was manifested in these children while under observation. One bottle-fed baby of two months, however, showed tetany-like symptoms. The history obtained in this case revealed that the infant was not getting either cod-liver oil or orange juice. The blood calcium of the infant was found slightly below normal. X-rays of the long bones demonstrated a mild grade of rickets. The contention that there is an intimate relationship between infantile tetany and rickets (26) and the calcium deficiency theory as an etiologic basis for tetany (27) are somewhat substantiated by this case.

12. Delayed dentition and irregularity in appearance of teeth were noted in one of the breast-fed, roentgenologically diagnosed rachitic children. Dental caries were not seen in any of the children observed for a period of two years.

13. No ill effects attending the oral administration of calcium gluconate-Sandoz over periods of months were observed in this survey.

(Concluded on page 239)

Spontaneous Pneumothorax in Children Under Three Years, Review of the Literature and Report of a Case

• Willard J. Davies, M.D., Rockville Centre, N. Y.

PNEUMOTHORAX is not a frequent disease in childhood. It is not mentioned at all in many textbooks. Moreover, its cause and mechanism is the basis for some debate.

In the twenty-six cases here reported, there were eleven recoveries and fifteen deaths, a mortality of 57.7 per cent. (Table I).

In the recovered cases, five occurred in females, three in males and three not given. The cause as given was due to pneumonia, five; to congenital cause, three; tuberculosis, one; and two not given. Seven involved the left side and four involved the right side.

As to the deaths: the sex was given as males eleven, females two and two not given. The causes were: due to tuberculosis, seven; pneumonia, three; multiple metastatic abscesses, one; perforated abscess, one; and due to congenital causes, two. The side involved was seven on the right and eight on the left.

Tuberculosis is the cause of the majority of cases of spontaneous pneumothorax in adults, usually as a rupture of a subpleural emphysematous vesicle. Acute vesicular emphysema in the adult is apt to bring about chronic emphysema but in the child it usually causes interlobular emphysema. The latter readily causes pneumothorax in the adult; in the child, mediastinal and subcutaneous emphysema, rarely pneumothorax. The pulmonary tissue in children is normally under maximum tension due to the disproportion between the lung volume and the size of the thorax. Vesicular emphysema may be caused by any sudden rise in intra-alveolar pressure due to whooping cough, or spasms of coughing aided by obstruction, as in laryngeal diphtheria and tracheobronchial adenitis.

In the infant, other factors than tuberculosis are responsible for the collapse, namely, small pulmonary abscesses of non-tuberculous nature. Rupture of these abscesses necessarily leads to pneumothorax and so it would follow from this cause that emphysema would complicate the collapse. Griffith ascribes pneumothorax in early life to pneumonia, whooping cough, measles, diphtheria and emphysema. With disease not considered, collapse may be due to trauma, with or without fracture of a rib, or puncture of a lung with an exploring needle, tracheotomy, and occasionally an aspirated foreign body working its way from the bronchi through the pleura.

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Following is the case report:

J. F., aged 18 months, female, admitted June 7, 1930. The child had been ailing for three months and one month before admission had had a definite pneumonia with temperature to 105.5 F. and had not been normal since, daily running a temperature of 99-102 F. with a definite hacky cough but no sputum.

Physical examination showed a very ill female child, dyspneic and cyanotic, temperature 99.4 F. There were several large herpetic sores about the lips, the chest was rachitic in shape and there were several large scars from recent cupping. The respiratory movement was slightly diminished on the right side and the heart displaced to the left. The upper right chest was hyperresonant and the right base was flat. The breath sounds were very distant on the right and slightly exaggerated on the left. There was also a large fluctuating mass on the right buttock. Roentgen examination on the day of admission showed a spontaneous collapse of the right lung and a fluid level to the fourth right rib. The heart was displaced to the left. Progress: The abscess over the right buttock was incised, drained and packed with iodoform gauze. A small catheter was inserted intercostally in the posterior axillary line. Thick, green, purulent fluid was obtained from the chest and daily irrigations of Jessen's solution were carried out until June 18, when the pus ceased to form. Roentgen examination on June 19 showed complete re-expansion of the right lung. Laboratory findings: the pus from the chest cultured type III pneumococcus. The urine was essentially negative. Complete blood count showed R.B.C. 3,560,000; Hb 65%; W.B.C. 29,250; polys 84%; small lymphocytes 13%; large lymphocytes 2%; and eosinophiles 1%. The Mantoux test to 0.05 and 0.1 mg. of O.T. was negative. The patient was discharged August 25, 1930, recovered.

Table I

DEATHS 15	SEX	Female	2
		Male	11
		Not given	2
	CAUSE	Tuberculosis	7
		Pneumonia	3
		Multiple metastatic abscesses (Staph. aureus)	1
		Perforated abscess	1
		Foreign body	1
		Congenital	2
	SIDE INVOLVED	Left	8
		Right	7
RECOVERY 11	SEX	Female	5
		Male	3
		Not given	3
	CAUSE	Tuberculosis	1
		Pneumonia	5
		Congenital	3
		Not given	2
	SIDE INVOLVED	Left	7
		Right	4

From the Nassau County Sanatorium, Farmingdale, N. Y.

Table II

Case No.	Sex	Age, Mo.	O.T.	Hemi-thorax	Admission diagnosis	Complications	End Result
1.	m.	8	1st Neg. 2nd Posit.	L.	Bronch-pn.	None	Improved—death one mo. later. Autopsy — tuberculous cavities throughout left.
2.	m.	22	Sputum Neg. Pirquet Neg.	R.	Lobar-pn.	None	Recovery.
3.	f.	18	Pirquet Neg.	L.	Lobar-pn.	None	Recovery.
4.	m.	15	Pirquet Neg.	R.	Lobar-pn.	Acute nephritis	Death. Autopsy—multiple abscesses rt. lung and pneumothorax.
5.	?	24	?	L.	Not given	None	Death—both lungs studded with tubercles
6.	f.	18	?	L.	Pneumothorax, left Bronch-pn., right	Measles	Death.
7.	m.	36	?	R.	Hemopneumothorax	None	Death—miliary Tbc.
8.	m.	36	?	R.	Laryngeal obstruction Diphtheria		Tracheotomy—surgical emphysema mediastinum.
9.	m.	24	?	L.	Double otitis, pneumonia R. Consolidation L.		Recovery.
10.	m.	16	?	R.		Lupus erythematosus Bronco-pn.	Death—tuberculous. Broncho-pneumonia right
11.	m.	16	?	L.	Broncho-pn.	Purulent pleurisy	Death—cavity, left, with purulent pleurisy.
12.	f.	10 da.	?	L.		Empyema at 8 yrs. Thorocoplasty at 8 yrs.	Well at 16 years.
13.	m.	9	?	R.			Death — pneumothorax, perforated abscess.
14.	f.	5	?	R.		Multiple skin abscesses	Recovery.
15.	f.	30	?	R.	Tb. lymphatic glands	Perforation lung by foreign body	Death—turbid fluid rt. chest; perforation pleura by an ear of rye.
16.	m.	5.	Pirquet Pos. Sputum Pos.	L.		Double otitis, pulmonary Tbc.	Death—pyopneumothorax.
17.	m.	3	?	R.		Furunculosis	Death—pyopneumothorax staph. aur., multiple abscesses both lungs.
18.	f.	23	Tuberculin 1. Neg. 2. Neg.	L.	Pneumonia hydro-pneumothorax		Recovery.
19.	m.	4	?	L.	Pertussis		Death—ruptured pleura, contact with tuberculous cavity.
20.	?	36	Tuberculin ++	L.	Empyema	Chylothorax spontaneous pneumothorax	Recovery—ascribed to erosion of the duct by Tb. gland.
21.	m.	congenital		L.			Death—pleural tear.
22.	?	congenital		L.			Recovery.
23.	?	congenital		L.			Death—broncho-pn.
24.	?	congenital		L.			Recovery.
25.	m.	congenital		R.			Recovery.
26.	f.	18	Mantoux 1. Neg. 2. Neg. 3. Neg.	R.	Pyopneumothorax gluteal abscess		Recovery.

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NOTE.—Two additional cases are reported by Joseph Greengard and Irving R. Adams in "American Review of Tuberculosis," August, 1933, Vol. XXVIII.

Calcium as a Preventive of Certain Diseases of Children

(Concluded from page 236)

Conclusion

It will readily be seen from the foregoing that, by means of a proper diet, calcium, vitamin D and plenty of sunshine, rickets, dental caries, etc., can be prevented with reasonable certainty. Because of the encouraging results obtained in this short investigation, the author feels justified in calling the attention of the obstetrician, the pediatrician and the general practitioner to the value of calcium in pregnancy and lactation as a prophylactic during this period for the mother and as a preventive of certain diseases of infancy and childhood. In conclusion, it is sincerely hoped that this report will arouse sufficient interest for additional and more extensive clinical study by the profession at large.

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Present Status of Idiopathic Ulcerative Colitis, with Especial Reference to Etiology

Moses Paulson, Baltimore (*Journal A. M. A.*, Nov. 25, 1933), points out that avitaminosis as a cause of ulcerative colitis is not supported by clinical experience, although the experimental evidence is striking. Vagotonia, as well as disturbances of calcium metabolism, has been thought to play a part in the etiology. There is neither satisfactory direct evidence nor properly controlled confirmatory studies establishing a specific or primary etiologic association between any bacterium and chronic ulcerative colitis. The definite connection between foci of infection and the etiology of this condition remains to be proved both experimentally and clinically. Experimental data indicate the nonspecificity of bacterial influences in this disorder. Recent work suggests that the greater and more prolonged the bleeding, regardless of the cause, the greater will be the diminution of the flora and the more marked the relative increase in cocci. These cocci, and to a lesser extent the other surviving intestinal organisms, normally present, probably are responsible for a secondary infection. Recurrences at present are certain to occur in all but the exceptional cases. The possibility of permanent cure is remote. There is no specific therapy, since the specific etiologic factor, if there is any, remains to be determined and the therapeutic response is not specific. Ileostomy is regarded as the operation of choice and should take place earlier than is practiced usually.

Functional Uterine Hæmorrhage

The pathology of profuse uterine bleeding occurring in the absence of any obvious reason has been the subject of investigation by Dr. A. Lloyd Potter, who described the conclusions he has reached at a meeting of the North of England Obstetrical and Gynæcological Society held at Sheffield on Nov. 24th. He had first repeated the work of Mr. Wilfred Shaw, who had found that the elastic tissue content of the uterus increased after each pregnancy and varied directly with the parity of the patient. The material examined by him provided ample confirmation of this work, and he thought that it could be taken as established that the elastic tissue content of the uterus bore a direct relationship to the parity thereof, and that it was in no way a sign of subinvolution, nor associated with the causation of functional bleeding. He had proceeded to the examination of 165 cases and had found it possible to classify them for the most part into two groups—namely, metropathia hæmorrhagica (34 per cent), and epimenorrhœa (48 per cent). In the former group the enlargement of the uterus was due to true hypertrophy of the muscle-fibres and not to an increase in the amount of elastic tissue. The endometrium was thickened and polypoid-formation was common, the microscopic appearance being similar to that of the premenstrual phase. Almost all the available ovaries showed follicular cysts and a singular absence of active luteal tissue. In the epimenorrhœal type the most striking feature found was œdema of the stroma and an increase in the number of thin-walled capillaries in the endometrium. In the ovaries available for examination the general picture pointed to hyperactivity of the follicular mechanism, an increase in the amount of active luteal tissue. In a few cases classified as of the hypomenorrhœal type, the patients complained of excessive loss at infrequent intervals; this group showed no characteristic pathological finding. Another small group included cases of postmenopausal bleeding of functional origin. The hæmorrhage in these cases was attributed by Dr. Lloyd Potter to the continuance of the pituitary action for some little time after the menopause. There remained 8 per cent of the total number of cases which he was quite unable to classify. In these cases some ovarian or pituitary dysfunction may have been responsible for the altered menstrual cycle.

—*The Lancet.*

The Psychiatric Aspects of Otolaryngological Practice: Citation of Cases

• Harold Hays, M.D., F.A.C.S., New York, N. Y.

DURING an experience of over twenty-five years in specialized practice, there have been many occasions when I have been impressed with the necessity of calling upon my knowledge of psychology and psychiatry to help me out in the relief or cure of certain vague and unaccountable nose, throat and ear conditions. In fact, it is beyond my comprehension how any man can practice medicine without being a psychologist. The interrelationship between many manifest physical conditions and the mental state of the patient is only too obvious to anyone with average medical intelligence. I can but refer to the manifest beneficial effects, due to mental adjustment, the result of a belief in one of the cults such as Christian Science. Even before my study of medicine when I became absorbed in physiological psychology and particularly in hypnotism, I was able to prove to myself that certain physical acts could be influenced by mental states. For example, a constipated individual could be hypnotized and the suggestion made that his bowels would move regularly with the result that the constipation was cured.

Emotional states have a great deal to do with body mechanism and this again is but the influence of the mind over the body. Depressed emotional states can very readily lead to lowered body resistance so that the patient is easily susceptible to any type of infection. I have observed these emotional states in many patients, particularly those who are suffering from some form of progressive deafness and the large number of patients who have so-called nasal sinusitis. Nasal sinusitis is a definite entity in a small percentage of cases but, in the majority, the pain in the head, the nasal discharge and all concomitant symptoms are influenced to a great extent by the emotional state of the patient.

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Speaking in generalities, it is surprising how seldom the otolaryngologist takes into account the vagaries of the sympathetic nervous system. This may be called the involuntary nervous system or what you may but it has a very definite effect upon certain nose and throat conditions and, often, on ear conditions. For example, let us take the cases of persistent rhinorrhea (hyperesthetic rhinitis), angioneurotic edema, the perennial hay fever or the common variety of hay fever. Is there any way for us to say that although the symptoms are manifestly local that the disease itself is a local condition? I think not. In all of these cases, we are confronted with a physical mechanism which is out of kilter. Some little device in the nervous system or elsewhere is out of its normal position or has sprung a leak so that the body functions are expressing themselves by a local manifestation. It might seem ridiculous to say that hay fever presents a psychiatric problem but there is no doubt in my mind that one has to consider the direct influence of the sympathetic nervous system and the mental attitude of the patient in determining what is best for his cure. The best proof of this is the fact that thousands of people are relieved or cured of hay fever and asthma by quack remedies, some of which have been analyzed and found to contain nothing but useless ingredients.

It is quite impossible for anyone in my special line of work to treat definite types of cases along psychiatric lines. Specific cases will always pop up from time to time which will need psychological attention and I shall cite a few of these in a moment. However, all otolaryngologists should have sufficient psychological training so that they are able to spot the case that needs this type of treatment, either handling it himself or else sending it to the trained specialist. For example, a few years ago a young woman presented herself with a long history of so-called sinus disease. Examination of the nose and sinuses was practically negative. To say to a patient such as this that she was perfectly well and did not need treatment would be ridiculous. What was necessary was to appreciate the fact that she had an overactive thyroid and a definite psychic complex which needed attention. She was referred to a psychiatrist who immediately appreciated the thyroid condition. The thyroid was dealt with surgically and treatment continued along psychiatric lines with the result that the patient is perfectly well today.

A citation of a few cases which have been recent experiences will show the value of the otolaryngologist's being able to handle cases along psychiatric lines.

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A young woman consulted me a few years ago because of a definite hearing loss. In early childhood, she had been operated upon for acute mastoiditis. At times her hearing was fairly good, at other times distressingly bad. When she presented herself for examination, she was so nervous that even the simple procedure of washing cerumen out of the ear canals prostrated her so that she had to remain in bed for quite a few days. Routine ex-

Read at a meeting of the Park West Clinical Society, May 21, 1934.

amination of the nose, throat and ears and general physical examination revealed nothing definite except a mild stenosis of both eustachian tubes locally and a possible increase in the size of the thyroid gland.

In all cases of this type, I make it a point to delve into the psychological or psychiatric aspects of the trouble. In order to improve her hearing in any way, it was necessary to hospitalize this patient and to immediately have a complete physical examination made in order to determine any exciting factors. She agreed to go to the hospital as an ambulant patient and came to my office daily for treatment. It was soon apparent to me that I was dealing with an unstable nervous mechanism and that the patient was subject to emotional explosions which continually impaired her hearing. I had numerous confidential talks with her in the privacy of my office and soon unearthed the underlying fact that she had a definite hate complex against her mother, who, by the way, was a most impossible woman. She confessed to me that her mother thwarted her at every turn and that there were violent quarrels after which she would become practically stone deaf. My first orders were to keep the family away from the hospital. It was then discovered that she had a mild thyroid condition for which proper remedies were given. The patient continued to improve for three weeks until her hearing was practically normal, at the end of which time her mother visited her, whereupon there was a quarrel and a hearing loss took place. From that time on the patient began to improve and finished this course of treatment with practically normal hearing.

The problem then was to advise the family that in her vacation from college, she should spend her time with a sister of whom she was very fond and not be in contact with her mother. I have followed this case for the past three years. In the first year, the patient was kept away from her mother and repeated hearing tests showed the hearing practically normal. Fortunately for her, at the end of the second year, her mother died. Not only has her hearing remained at a good level but her whole mental attitude toward life has changed and, a short time ago, she married. I have no doubt there will be little trouble with her hearing from now on. Of chief importance is to instruct her not to bear any children.

Of course this is an unusual case but borderline cases frequently come to our notice. I have in mind certain types of deafness which are very definitely influenced by family maladjustments. All the local treatment that is known, every attention to general systemic upbuilding, would get no results unless one were able to handle the patient along psychological lines. These are not cases of hysterical deafness by any means. They are truly pathological cases which are definitely influenced by an unstable nervous mechanism.

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It almost goes without saying that the otolaryngologist should find himself in a position to appreciate that he can get nowhere with many of his patients unless he shows that he is interested in psychical phenomena as well as physical phenomena. Here is a young woman with a mild type of sinus condition whose mother has an incurable cancer. It will be utterly impossible to get her well while she is in the melancholic state due to her worry over her mother. Another young woman presents herself with intermittent headaches and pressure over the eye caused by an inflammatory condition of the mucosa of the nose and sinuses. As a school teacher she is overworked, her nerves are on edge, she is unable to sleep and finds herself completely devitalized both physically and psychically. Another type of case presents itself where there is a definite lesion in the nose of slight importance. The patient is highly neurotic and is of the introspective type, constantly worrying about himself. He has a sinus complex and, unless some psychiatrist can get hold of him, it will be utterly impossible to correct the nasal condition.

Because of my knowledge of physiological psychology and particularly of hypnosis, I have been able to cure manifest physical conditions by mild hypnotic treatment. I do not attempt such treatment in adults but it is a simple procedure in children. I shall cite two interesting cases.

A child of twelve had recovered from a mastoid operation some four or five months before I saw her. Such children often have a torticollis which persists for some time unless one insists upon having them exercise the muscles of the neck before they become too rigid. This youngster held her head down stiffly on the left side. All the muscles of the neck were rigid. Mild diathermy treatments accomplished something but not enough. I placed her under mild hypnotic treatment and, at the end of the third treatment, the muscles had relaxed and the neck and head were in normal position.

The second case was more interesting. This was a neurotic type. She had had a persistent hacking cough for two years before she came to see me. She had been examined by any number of competent physicians who had given her all the known remedies. X-rays of the chest and sinuses were negative. After a thorough examination of the nose, throat and ears, I told the mother that I felt sure that I could cure the child by hypnosis. After the first treatment she was considerably relieved and slept far better than she had for many a night for the cough was most persistent when she went to bed. After the third treatment, the cough had entirely disappeared and there has been no return during the past six months.

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It is impossible for one to determine the severity of complaints when a patient is constantly complaining and there is no definite determination of any pathological condition. Such patients are considered neurasthenics and very seldom get the sympathy they deserve. Of course they are the types that have their tonsils removed, their appendices removed, their teeth removed and then find themselves as badly off as ever. Within the past few months I have seen a young girl who suffered from

a complexity of conditions. I was first called to see her because she complained of a severe pain in her right ear which was all out of proportion to the small furuncle which was present. I had been called by a highly intellectual man who for years had been in love with the child's mother. In fact he had a decided parental attitude toward this youngster of fifteen. On talking over her case with the mother and this man I found out that she had suffered from repeated attacks of vomiting and other gastro-intestinal symptoms which had warranted an operation for appendicitis a year before. But the appendix operation had not cleared up the condition. Careful inquiry disclosed the fact that at irregular intervals the girl would develop symptoms of one kind or another which seemed very alarming. She did not seem to be of the nervous type but one realized that she was not a happy youngster.

I was able to clear up the ear condition almost immediately. I was interested in this patient because she seemed to be the type of individual that was worth while helping. I gave her case considerable thought for twenty-four hours and, when her mother brought her down to see me shortly after that, I stated to her plainly that the cause of all the patient's trouble was the affection that existed between the mother and her lover. I suggested that the only way to get this child completely well was to send her to a boarding school or at least to get her out of the abnormal atmosphere in which she was living. The mother was rather dumbfounded but repeated conferences with the two interested adults and with the child convinced them that I was right. It seemed impossible, because of the financial situation, to send the child away to school, but I did manage to discover that she was interested in art and finally arranged that she should go to a school for applied design. This immediately changed this patient's mental point of view; she became happier and, as far as I know, is perfectly well today. The situation is so complex that I am not sure of the future. When one began to analyze this case, one discovered that the patient had been completely spoiled by an indulgent father who, when she was only nine years of age, used to take her down town and fit her out with costumes costing over a thousand dollars. A few years later she saw her father come down the gangplank of a steamer with his mistress on his arm. Then followed divorce proceedings at which she had to be a witness and, on top of that, she had to see her mother lavish all the affection she wished for herself on someone who, up to that time, had been a total stranger. A case of this kind is extremely interesting from many points of view and it is surely the duty of the otolaryngologist to understand all the psychological factors involved if he wishes to do his full duty toward his patient.

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In summing up I feel that it is necessary for every physician, whether he practices a specialty or not, to know that there are definite psychological factors involved in many cases and that these factors demand his attention. Whether he is able to treat these patients himself or refers them to someone else is immaterial. What is necessary is to be interested sufficiently in the patient to be able to recognize what can be done with local treatment and what can not be done.

133 East 58th Street.

Phenolphthalein Intoxication

BEN A. NEWMAN, Detroit (*Journal A. M. A.*, Sept. 2, 1933), observed nineteen patients with phenolphthalein eruptions in his clinic during the past year. The characteristic eruption is easy for the dermatologist to recognize immediately on inspection. As far as is known, only three other substances, antipyrine, arsphenamine (neoarsphenamine) or amidopyrine, are capable of provoking identical eruptions. In reviewing the literature, the author assembled seventeen types of atypical phenolphthalein eruptions and three types of visceral involvement. To these he adds one of each type and calls attention to the fact that phenolphthalein is not innocuous. In the present state of knowledge, the lesions of this eruption appear to be histologically indistinguishable from those of erythema multiforme. The clinical manifestations, both typical and atypical, including the noncutaneous morbidities associated with phenolphthalein intoxication, may all readily be ascribed to a primary vascular insult. In considering the pathogenesis of fixed eruptions, in which group phenolphthalein intoxication belongs, reasoning must conform with the concepts associated by definition, with the term "fixed eruption." The tendency to recur or persist at a site previously that of an initial lesion, together with its exudative character, favors the belief that a capillary toxicosis is the key to the pathogenesis. Phenolphthalein is contained in more than 125 proprietary preparations, put up in the form of laxative drugs, chewing gums, confections, fruits and biscuits. It is also used for pink icing on cakes, for coloring of candies, and in pink mouth washes and dentifrices. Hence, when exudative lesions of obscure origin are present, phenolphthalein as an etiologic agent should be considered in differential diagnosis.

Our Inadequate Food and Drugs Act

But there you have it in a nutshell. The Food and Drug Law is inadequate. The Food and Drug Administration enforces it as conscientiously as possible. It seeks in addition to keep the public informed and warned about remedies of sorts. When it does so it is reproved by the trade for its meddling, yet if it did not do so it would be barked at by reformer critics. In short, "Don't shoot the pianist, he is doing the best he can!" But it would be a good idea for the public to demand more complete protection from fraudulent remedies. However, it must demand this from Congress which can change the law, not from the Food and Drug Administration which can not do so. The law does not cover collateral advertising in magazines, newspapers, or over the radio; it does not cover cosmetics, unless they make therapeutic claims; it does not cover so many so-called therapeutic devices and preparations merely because they are designed to aid abnormal conditions that are not, in the dictionary sense, diseases; while it requires label statements to be true, it does not require that a correct statement of ingredients be placed on the label of a preparation.

The law requires a plain and conspicuous statement of the net weight of packaged foods, but can do nothing against slack filling or deceptive packages which appear larger than they really are. It defines articles as adulterated only if the *added* adulterant is deleterious to health; a poison naturally present in quantities greater than the internationally accepted tolerance, like arsenic in sea food, would not be covered, nor is the mere presence of a poison, if not proven to cause deleterious effects on health when ingested in the food, a violation. Therapeutic statements on labels must be proven not only false but *fraudulent*, meaning the Government must show that the manufacturer knew his label was false when he had it affixed.—*Am. Med.*

Right-Sided Diaphragmatic Hernia

Robert P. Sturr, M.D., Associate in Radiology, Graduate School of Medicine, University of Pennsylvania, Philadelphia, Pa.

PRIOR to the routine and widespread use of roentgen examination, the diagnosis of diaphragmatic hernia was usually made at autopsy and was considered extremely rare. Even on the autopsy table it was frequently overlooked, due to the return of the herniated parts into the abdomen after the muscular relaxation following death.

It is of interest to note, in reviewing the literature on this subject, that only 47 cases of diaphragmatic hernia diagnosed during life had been reported up to 1923; the first two having been reported in the *Opera Chirugica* by the Father of French surgery, Ambroise Paré, in 1610.[1] The Mayo Clinic[2] reports only 27 cases in its series up to 1924 and states it occurs once in every 23,000 cases. Pancoast[3] does not feel that diaphragmatic hernia is as rare as was commonly thought. He found 16 left sided hernias in approximately 9,000 cases examined.

Right-side herniation is sufficiently infrequent as to deserve special mention. Oliphant[4] states that herniation occurs eight times more frequently on the left side and involvement of the right side is seldom encountered. This may be explained by the fact that the liver, occupying as it does the right diaphragmatic dome, acts as a natural protective barrier to the passage of the abdominal contents into the pleural cavity. The structure of the diaphragm also favors left-sided herniation as the trilobed tendons occupy more of the right dome. The less supported muscle fibers of the left diaphragm, which may be separated or split under undue pressure, offer less resistance and there is proportionately more opportunity for herniation. The stomach, which is so distensible and mobile, is a source of great pressure and possibly tends to weaken the left diaphragm. More natural openings are also found on the left side.

The esophageal hiatus is the most common site of herniation. The degree of enlargement of this opening may vary widely. Normally the orifice admits one finger. In the case of hernia it may admit two fingers, or on the other extreme, be so large that the entire hand can be passed into it. This is the only one of the natural openings that is muscular in action and has no tendon, thus it is prone to dilation. There are no cases on record of herniation through the aortic or caval openings. Practically all herniations through the elliptical esophageal orifice enter the left chest, sometimes the posterior mediastinum, but very rarely the right chest. Practically every abdominal organ has been known to herniate through the diaphragm. The stomach is most frequently dislodged, next the transverse colon, omentum, small gut, liver and pancreas, in the order named.

Varieties of Diaphragmatic Hernia: Three types are recognized; Congenital, acquired, and traumatic, the type being determined according to the causative factors producing the aperture in the diaphragm. The acquired form occurs in those parts which may be congenitally weak in development. The differentiation is not only important for surgical reasons, but also enters into compensation awards after industrial accidents.

Hedblom[5] reports that of 1,003 diaphragmatic hernias reported in the literature since 1900, one-third were classed as congenital, slightly more than one-third as acquired after birth and one-third acquired after trauma. A sac is present in less than one-fourth of the congenital herniations and in more than 95% of cases acquired after birth, but is rare in hernia due to trauma. About 60 cases of herniation through the parasternal foramen of Morgagni have been reported. True congenital diaphragmatic hernia, as reported by Dodds,[6] must not be confused with the ordinarily described congenital hernia. This is a rare and grave condition. Of 127 cases reviewed by him 88 were either stillborn or died a few hours after birth.

Diagnosis: The possibility of the existence of diaphragmatic hernia should always be borne in mind in making every gastro-intestinal examination. The diagnosis is seldom made clinically. Careful roentgen examination is the only means of making a definite diagnosis and even with this aid it can be overlooked. Roentgenologists who routinely examine their gastro-intestinal cases in the upright posture only, will seldom diagnose diaphragmatic hernia. This may be explained by the fact that the herniated organs frequently gravitate back into the abdomen with the patient upright. Case[7] emphasizes the frequent spontaneous reduction of the hernia just prior to the x-ray study, thus contributing to diagnostic failure. He also states that the colon is so frequently involved that the examination should proceed with a barium enema whenever there is vomiting or need for expediting x-ray study. Both the barium meal and enema are essential in establishing a diagnosis. Lateral, anteroposterior, and oblique studies should be made, always including the chest. Failure to demonstrate diaphragmatic hernia may be due to the lack of filling of the herniated organs. This particularly applies to the small herniations of the cardiac end of the stomach, which will frequently not be demonstrated unless the patient is in the Trendelenburg position. Omental hernias cannot be demonstrated. Repeated x-ray examination may be necessary in

order to determine the number of organs that are herniated. The roentgenologist should be able to locate the exact site of the herniation and attempt to determine its type, as such information will be an invaluable aid to the surgeon, especially in the event of strangulation or in hernias of the acute traumatic type.

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Differential Diagnosis: Diaphragmatic hernia

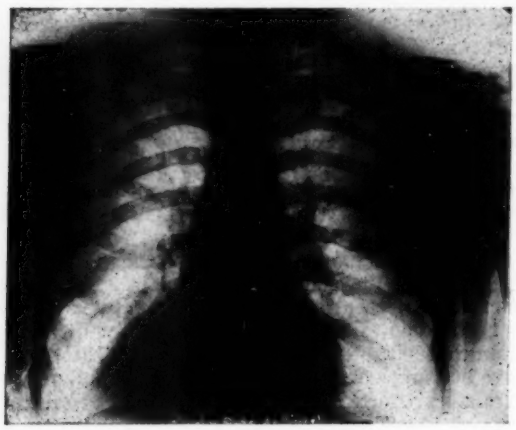

Figure 1. Teleoroentgenogram of the chest taken on admission, showing the homogeneous shadow extending beyond the right border of the heart and merging with the diaphragmatic outline.

must be differentiated from eventration, esophageal diverticula, cardio-esophageal relaxation, cardiospasm and hour-glass stomach. In eventration it may be extremely difficult or impossible to differentiate the outline of the overstretched diaphragm in the roentgenogram because of its thin walls throughout the dome. Lateral and antero-posterior studies made with the use of the Bucky diaphragm are necessary in demonstrating the unbroken line of the diaphragamatic dome with the stomach below it. In hernia repeated examinations may show altered findings, while in eventration the results are uniform. In hour-glass stomach and esophageal diverticulum, their location and relation to the diaphragm will differentiate them from hernia. Still more confusing are the shadows produced by the herniated organs, as observed in the roentgenogram of the thorax. These may be mistaken for thickened pleura, pleuritic bands, pneumothorax, free fluid in the pleural cavity, pulmonary abscess, etc. Truesdale[8] reports a case of gastric herniation, in which a needle was inserted into the pleural cavity for free fluid and milk was obtained from the stomach.

On finding any obscure, unaccountable shadows in the lower thorax, the presence of diaphragmatic hernia must be borne in mind and one should not hazard a diagnosis until a complete gastro-intestinal examination has eliminated the presence of this condition. After severe crushing traumas, which are now so frequently encountered in automobile accidents, it is important for the examining physician to be on the alert for signs and symptoms pointing to traumatic hernia of the diaphragm.

Thoracic stomach, as described by LeWald[9], must be differentiated from diaphragmatic hernia. In this congenital anomaly, the stomach has never descended into the abdomen. The chief point in the differential diagnosis is the short esophagus, no portion of which is below the diaphragm.

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Symptoms: The symptoms of diaphragmatic hernia may be classed as thoracic and abdominal and may present the widest variations. According to Truesdale[8], the symptoms and signs of herniation are so complex, bizarre and changeable that the condition is usually diagnosed erroneously. In his series of cases it was diagnosed as pulmonary tuberculosis, heart disease, pertussis, persistent thymus, bronchitis, constipation, obstruction and intussusception. The physical signs and symptoms will vary according to the side of the herniation, the amount of displacement of the thoracic organs, the amount of herniation of the abdominal organs into the pleural cavity and the state of fullness of the abdominal viscus occupying the chest. A case may show signs of pneumothorax at one time, hydrothorax another, depending upon the amount of fluid present in the displaced stomach or bowel at the time the examination is made. There may be no appreciable symptoms in the congenital or congenital-acquired types, even with extreme herniation. Thoracic symptoms, such as cough, cyanosis and a feeling of fullness, may predominate and may be in direct proportion to the amount of pressure ex-

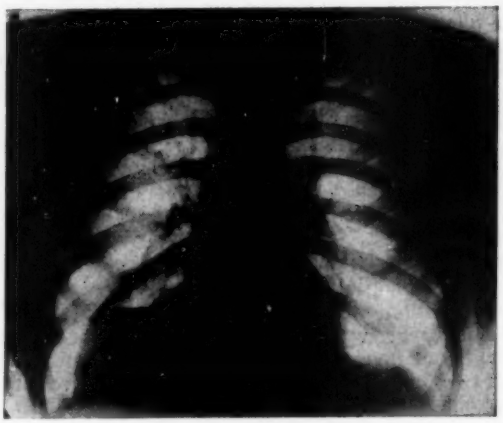

Figure 2. Radiograph made on second examination, showing a fluid level in the area of opacity shown in the right chest in Figure 1.

erted by the herniated parts. The abdominal symptoms are chiefly obscure colicky pains with obstinate constipation. The regurgitation of sour-tasting material, especially when the patient is lying down, is a common symptom. This regurgitation is due to incompetency of the cardio-esophageal opening. In the traumatic form the symptoms are those associated with the transmission of a foreign body, hemorrhage, collapse of the lung and pneumotho-

.ax. Death may ensue in the first twenty-four hours, not from the tear in the diaphragm, but from shock and asphyxia. In the event of obstruction or strangulation of any of the herniated parts, entirely different findings will be presented, which will demand immediate surgical treatment.

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Case Report *

C. P., a well nourished colored male, age 28, was

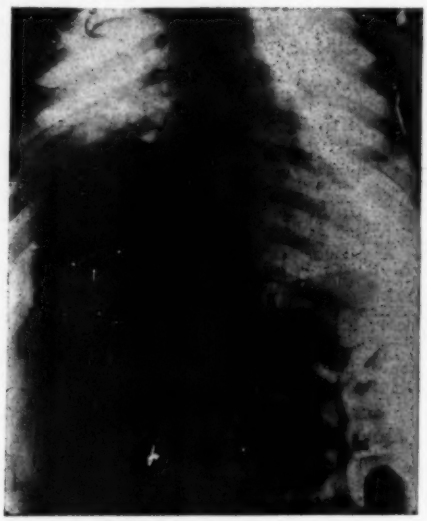

Figure 3. Roentgenogram made of the patient in the recumbent position, showing the marked herniation of the colon into the right pleural cavity.

admitted to the Graduate Hospital under the service of Dr. Piersol. His chief complaint was a marked general edema of about three weeks' duration. Typical symptoms and findings of an acute nephritis were presented. Albumin and casts were found in great amount on examination of the urine. No symptoms referable to the chest or gastro-intestinal tract were present, excepting an obstinate constipation of long standing. There was a rather indefinite history of trauma to the back fifteen years ago, caused by the kick of a mule. The patient remained in bed for approximately two months following the injury and made an uneventful recovery.

Physical Examination: The patient showed some general edema, but otherwise appeared normal. Examination of the heart, lungs, and abdomen were essentially negative. Examination of the urine and other laboratory findings showed an acute glomerular nephritis to be present. The patient was referred to the X-ray Department for routine heart measurements.

Roentgenographic Study: Examination of the chest demonstrated a fairly dense homogeneous shadow overlying the cardiac shadow on the right side. This extended 5cm. to the right of the cardiac border and merged with the diaphragmatic outline. We were unable to account for this unusual appearance and ventured no diagnosis. Requesting the patient to be returned for further study, our second examination revealed several fluid levels in this above described area. On lateral view and by fluoroscopic examination, with the patient lying down, sacculated areas of gas were noted, which gave us our first suggestion of herniation of what appeared to be the colon. For this reason, the patient was first given a barium enema. This revealed the herniation of the entire transverse colon into the right chest. The patient suffered no discomfort, even when the colon was markedly distended with the bariumized solution. Radiographs made at this time demonstrated what appeared to be a thickened sac around the shadow of the distended colon. After complete evacuation of the colon, barium was given by mouth. The esophagus was found to be short, dilated and totally intrathoracic. The stomach filled readily and was located high in the right chest. It was turned on itself and was shown to be the uppermost portion of the sac. The anterior surface of the stomach was in direct relation to the posterior chest wall. A portion of the duodenum was also herniated. At this time, the colon was again filled; a portion was still intrathoracic, but it was obvious that the distended stomach had forced some of the colon into the abdomen. The emptying time of the stomach and bowel was not materially delayed by their unusual position. The sac was not adherent and on fluoroscopic examination moved synchronously with the diaghragm. The patient succumbed as a result of his nephritis two weeks after roentgen examination.

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Autopsy findings: The esophageal hiatus was

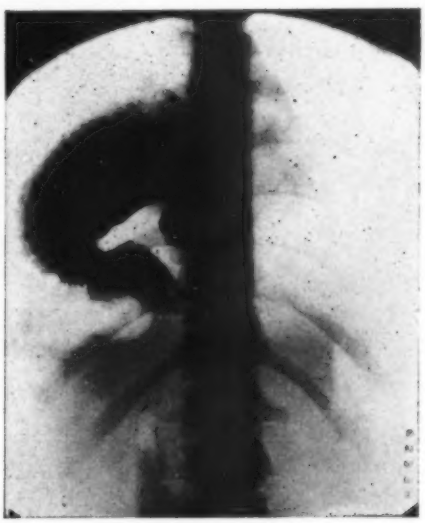

Figure 4. Showing the marked elevation of the herniated stomach in the right chest. It is rotated on itself and adherent in the sac. A portion of the duodenum is also above the diaphragm.

found to be the site of herniation; it admitted the palm of the hand (approximately 10cm.) freely. There were adhesions between the stomach and the sac. A portion of the duodenum was herniated.

* I am indebted to Dr. George Morris Piersol, Professor of Medicine, and Dr. George E. Pfahler, Professor of Radiology, for the privilege of reporting this case.

The entire colon was found at this time to be intra-abdominal.

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Summary

1. A right-sided diaphragmatic hernia is considered of such interest and rarity as to merit reporting.
2. Careful roentgen study is the only reliable method of establishing a diagnosis. It is seldom made clinically.
3. Diaphragmatic hernia is much more common than was previously considered and its presence should always be borne in mind when making a gastro-intestinal study.
4. A roentgenogram of the chest showing any obscure and unaccountable shadows should be followed by gastro-intestinal examination.
5. The esophageal hiatus is by far the most common site of herniation in the congenital and acquired types.
6. The symptoms are widely variable and not proportionate to the extent of the herniation, especially in the congenital and acquired types. A massive hernia may be present with little or no symptoms, as was so apparent in the study of this case.

Figure 5. Lateral view, showing the site of herniation. Note the barium-filled colon protruding through the aperture.

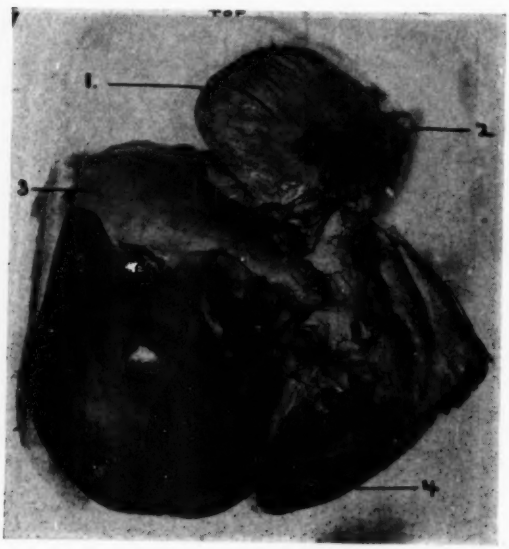

Figure 6. Photograph of parts removed *en masse* at autopsy:
1. Sac.
2. Terminal esophagus.
3. Diaphragm.
4. Liver.

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1823 Spruce Street.

Amyl Nitrite and Cyanide Poisoning

Methylene blue has been shown by Sahlin, Eddy, Brooks, Hug, and Hanzlik to antagonize the action of cyanide in animals, and recently it has been successfully used by Geiger in the treatment of cyanide poisoning in a man. K. K. CHEN, CHARLES L. ROSE and G. H. A. CLOWES, Indianapolis (*Journal A. M. A.*, June 17, 1933), investigated both methylene blue and amyl nitrite in cyanide intoxication and have found the latter to be more efficient than the former. It was found that the minimal lethal dose of sodium cyanide in mice by subcutaneous injection varied from 8 to 14 mg. per kilogram. In rabbits the minimal lethal dose was determined to be 2.2 mg. and in dogs 6 mg. per kilogram. Methylene blue given intravenously, in order to be effective in mice and rabbits, must be administered within a short time, ranging from five minutes before to one to two minutes after the subcutaneous injection of sodium cyanide. The maximal amount of the cyanide successively antagonized by methylene blue was twice the minimal lethal dose. In dogs, similar results were obtained when the dye, either in a single dose or by repeated injections, was introduced directly into the blood stream. No animal was protected by methylene blue medication against three minimal lethal doses of the cyanide. By the inhalation of amyl nitrite, dogs can tolerate four minimal lethal doses of sodium cyanide. One of two animals that received four and a half minimal lethal doses also completely recovered. Those that died from larger doses of the cyanide seemed to have a tendency to survive longer when treated with amyl nitrite. Experimentally the efficiency of this drug in antidoting cyanide poisoning is thus at least twice that of methylene blue, and it possesses the added advantage of being readily administered by the respiratory route. The authors suggest that a rational procedure in managing a case of cyanide poisoning based on animal experiments might consist of (1) immediate administration of amyl nitrite for from fifteen to thirty seconds to be repeated every three to five minutes if the patient is unconscious and rigid; (2) gastric lavage at once if the poison is taken by mouth; (3) artificial respiration by hands in case of gasping while the administration of amyl nitrite is continued; (4) the frequent counting of pulse and respiratory rates, and (5) the continuous observation of the patient for at least the first twenty-four hours. During convulsions, the inhalation of amyl nitrate may be prolonged to a minute or slightly longer. When respiration and heart rates show little or no abnormality, the administration of amyl nitrite should be reduced to once every several hours. To combat severe headaches that may occur, an analgesic with no depressive action on respiration may be employed.

Surgery in Diabetes

• Edward C. Brenner, A.B., M.D., F.A.C.S., New York, N. Y.

ACCORDING to conservative estimates there are over one million diabetics in our country. What proportion of these, during the course of their disease, will require surgical treatment, is impossible accurately to foretell. However, we may evaluate the frequencies and magnitude of their surgical pathologies when it is recalled that from 12% to 15% of all diabetics who enter hospitals are admitted for surgical complications.

For clinical reasons these patients may be divided into two groups, (a) those of election, in whom the surgical pathology is in nowise related to the pre-existing diabetes and, (b) those of necessity, in whom the surgical complications are directly or indirectly resultant upon the persistent hyperglycemia.

Cases of Election—Prior to the advent of insulin therapy (1921) the conservative surgeon held aloof from operating upon such patients unless the pathology was of acute or disabling severity. Diseased gall-bladders and appendices, intractable chronic gastric and duodenal ulcers, herniae, pelvic pathologies, et cetera, were advised against operation. In the best hospitals, the mortalities from diabetic surgery were from 20% to 40%. Fortunately this no longer pertains and the general practitioner should know beyond peradventure of doubt that, *in the absence of infection*, the surgical risk in skilled hands, with proper medical care before and after operation, is no greater for the diabetic than it is for the non-diabetic patient of the same age and general physical condition.

Surgical cases of election may be handled as follows: (1) Is surgical interference indicated? If so, (2) Determine the practicability of relieving the hyperglycemia, with or without acidosis, by diet and insulin. It should here be emphasized that, in the absence of acute infection, the sugar tolerance is not influenced by operation. (3) Appraise the patient's general constitution. If the surgery is indicated and the diabetes is brought under control, a patient, constitutionally competent, may be given about the same prognosis as the non-diabetic. Wounds heal in the same time and the surgical convalescence is not protracted. However, certain precautions should be taken. A few days before operation their carbohydrate intake should be increased, and their insulin proportionately as well, so that the glycogen storage in the liver may be at its maximum.

The question of anesthetic is important. Chloroform should never be used. Ether is also contraindicated. It increases the blood sugar and produces acidosis through diminution of blood oxidation. Moreover, the urinary output is decreased and the excretion of acetone bodies diminished. The frequent vomiting accentuates the acidosis. Moreover, the effect of insulin upon carbohydrate metabolism is largely neutralized when the organism is saturated with ether. Novocaine block anesthesia holds first choice. In pelvic and lower extremity surgery many surgeons favor spinal anesthesia (this is definitely contraindicated for gastric or duodenal pathology).

For general anesthesia nitrous oxide and oxygen or ethylene is preferred. A preliminary hypodermic of morphine gr. 1/6 to gr. 1/4 with atropine gr. 1/200 to gr. 1/150 is a decided adjuvant. Occasionally small amounts of ether must supplement this in order to obtain adequate relaxation. In such cases the system may be rid of ether by the inhalation of 5% CO_2 in air or oxygen after operation.

Postoperatively in non-diabetics it is a frequent custom following laparotomy to administer glucose solution by rectum. In diabetic patients this procedure is too indefinite. Excellent results are obtained by giving definite dosage of glucose by intravenous infusion. 3% to 5% glucose in normal saline is *slowly* infused into the vein (usually at the elbow), using one unit of insulin to two grams of glucose. Needless to say, the solution must be kept warm during the entire infusion. Not more than 50 grams are given at a time. The usual procedure is to administer 500 to 1000 cc. of 5% glucose in sterile normal saline, with the proper units of insulin added thereto, every four to six hours as indicated. In cases of kidney insufficiency the saline is omitted and the glucose is given in sterile water.

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Chronic cholecystitis with or without stones deserves special mention. The question of the causative factors of chronic cholecystitis in its production of chronic pancreatitis and possible resultant diabetes is not germane to this discussion and therapy. It has been definitely proven that infections lower the diabetic's sugar tolerance and gall-bladder infection is no exception. Striking illustrations of improvement in the diabetes have occasionally been noted following cholecystectomy.

However, most cases of gall-bladder disease occur in overweight, middle aged individuals, the same class in whom mild diabetes is so common. These cases are very favorably influenced by operation, perhaps largely through the removal of a focus of constant infection. In general, it may be stated that the indications for gall-bladder surgery are the same in the diabetic as in the nondiabetic. With proper pre-medical care, the operation is safe and the subsequent effect upon the diabetes is usually favorable.

Herniae in diabetes present a different problem.

There is no infective element and the problem is chiefly one of the patient's discomfort. Several factors besides the diabetes must be considered—the age of the individual, his occupation, the type and size of the hernia, especially whether reducible or irreducible, also any tendency toward inflammation or irreducibility, digestive disturbances, and last but not least, his general musculature.

Patients past middle life with reducible herniae are best treated with a properly fitted truss. This should be applied before rising in the morning. Needless to say, a truss should never be worn over an irreducible hernia. Patients whose occupations entail marked increase of intra-abdominal pressure should not be operated. In these the danger of recurrence is large. Those with very flabby musculature, especially the obese with large direct herniae, are poor candidates for permanent cures. The group of middle aged (the majority) patients with irreducible herniae, especially with concomitant digestive disturbances, are best operated upon under block novocaine anesthesia. Those more advanced in years only become surgical if definite obstruction occurs. Strangulation at any age knows no mercy but the scalpel.

Appendicitis is a common problem in the diabetic. A word of warning should be emphasized. A diabetic with his sensorium dulled by acidosis often tolerates pain and inflammation with little complaint. The writer has had two such cases go on to abscess formation who had refused operation because they had almost no pain. On the other hand, two other conditions may occur in a diabetic which may simulate an acute abdominal condition. One is the abdominal discomfort, sometimes severe pain, of a hypoglycemic reaction; the other, severe abdominal pain with vomiting and diffuse abdominal tenderness, which may occur in the early stage of diabetic acidosis. A preoperative urinalysis should always be done before any operation.

The acute appendix is not to be temporized with unless it is definitely subsiding when seen. If rupture and diffuse peritonitis ensue, the mortality is much higher than in the non-diabetic. The Ochsner treatment for peritonitis is contraindicated as statistics reveal a prohibitive mortality. In peritonitis cases, if one waits to control the hyperglycemia and acidosis, these may be improved but the patient will succumb. Bacteria with sugar in the peritoneal cavity grow with astounding prodigality. Futhermore, the value of insulin is decreased more than 50% in the presence of infection. When drainage is established, the efficacy of insulin returns.

Gastric and duodenal ulcers, in the diabetic or the non-diabetic, should be given a prolonged course of medical treatment. The surgical indications are in general the same as in non-diabetics with the reservations enumerated in the first paragraph on Cases of Election.

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Infection of Bartholin's glands, Skene's glands and of the cervix lowers a diabetic's sugar tolerance and should be cured by appropriate palliative measures. Lacerations of the outlet resulting in cystocele and rectocele, with or without descensus uteri, are not to be dealt with surgically unless the condition is severe and the patient is only mildly diabetic. Cases of extensive cervical laceration with concomitant infection are perhaps best treated with diathermy, coning out the diseased glands according to accepted technique.

Fibroids not larger than a grapefruit and producing symptoms of menorrhagia or pressure, in which there is no adnexal inflammation, respond well to radium. Larger growths may require supravaginal hysterectomy. Malignancies of the cervix or body of the uterus should receive the same therapy as in non-diabetics.

Pyosalpinx and tubo-ovarian abscess present relatively the same problems as in the normal patient. The infective element will influence the power of insulin to control the carbohydrate metabolism.

About 1% of the cases of hyperthyroidism are complicated by diabetes. Whether hyperthyroidism causes diabetes is a moot question but certainly the hyperthyroidism accentuates the diabetes, increases the danger of acidosis, and renders insulin less effective. Iodine therapy, usually given as Lugol's solution, helps the hyperthyroidism and indirectly the diabetes. X-ray is a valuable adjuvant. If rest, sedatives, iodine and radiation fail to control the hyperthyroidism, surgery is indicated and most excellent results follow. In many cases the diabetes is ameliorated in a manner similar to that obtained in removing an infection of considerable magnitude.

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Cases of Necessity. (1) Furunculosis—Diabetics are especially prone to furuncles. Their dry skin, containing very little oil, predisposes to cracks and the invasion of the hair follicles by surface bacteria. These apparently trivial surface infections require immediate surgical treatment as they may progress to deeper infections of serious magnitude. Small superficial furuncles and boils may be painlessly treated as follows: The skin for about 1 cm. surrounding the infection is painted lightly with tincture of iodine and swabbed off with 95% alcohol. A droplet of pure carbolic is applied to the dome of the furuncle. This produces sufficient anesthesia to make painless a small crucial incision through which the pus is evacuated. *Do not squeeze the boil.* This pernicious practice leads to the formation of secondary furuncles. The hard zone about the follicle infection is Nature's protective barrier of leucocytes. Squeezing may break down this first line of defense. When the pus is evacuated, it should be swabbed off with 95% alcohol. A wet dressing of Dakin's Solution or 5% alcohol or 1-500 potassium permanganate should be applied for 24 hours. Over the wet dressing a hot water bottle or electric pad often adds relief. The antiseptic wet dressing prevents infection of the neighboring hair follicles. The writer prefers to open boils with the endothermy needle and sterilize the contents by coagulation. The results are excellent in both boils and furuncles, if skilfully performed.

Most boils are incised under 1% to 2% novocaine anesthesia. The object of the anesthesia is to produce a novocaine block *about* and *not into* the boil. After the area has been painted with tincture of iodine or mercurochrome, the first insertion of the hypodermic needle may be rendered painless by applying a small droplet of pure carbolic to the site of puncture. Once the tip of the hypodermic needle enters the skin, the solution should be injected in advance of the needle. Under no condition insert the needle into the boil as its withdrawal may infect the surrounding tissue. The anesthetic should be injected circumferentially about the boil. Attention to these details will render what is often a very painful procedure quite innocuous. Larger boils and especially those in the axilla are best incised under gas or gas-oxygen anesthesia. In all cases the incision must be radical enough to obtain adequate drainage. It must always be remembered that infection has a harmful effect upon diabetes and demands prompt treatment regardless of acidosis. Treat the infection first, then the diabetes.

To prevent recurrent furunculosis, scrupulous cleanliness of the skin must be maintained and the hyperglycemia controlled. Some believe a larger carbohydrate intake, compensated by increased insulin dosage, is advantageous. Vaccines, either stock or autogenous, are sometimes efficacious. It should be remembered that any patient with recurrent furunculosis, even in the absence of glycosuria, should have a blood sugar done, as many such cases are suffering from a low grade hyperglycemia.

Abscesses and cellulitis demand immediate attention. In patients with acidosis, these should be sought for on the back and buttocks, for often their threshold of pain sense is greatly lowered.

Chronic leg ulcers are commonly found in those of advanced years, especially with arteriosclerosis. Usually the skin surrounding the ulcer is mildly infected. Excellent results are obtained by placing the patient in bed, elevating the affected extremity on pillows and applying a continuous wet dressing of normal saline, Dakin's solution or Dichloramine-T. Lead and opium solution is preferred by some.

With proper carbohydrate balance, the infection usually subsides quickly and, once the ulcer becomes free of infection, its healing will follow the application of such stimulants as 4% scarlet red ointment about its borders, balsam of Peru, et cetera. Occasionally large granulating ulcers require Thiersch or pinch grafts.

Another type of ulcer, less common, is the perforating. This resembles that of tabes dorsalis and usually is accompanied by nerve involvement producing areas of anesthesia. These ulcers are very sluggish and often involve the deeper parts, producing osteomyelitis. For the ulcer *per se* the best treatment is exsection and suture of the soft parts.

Carbuncles require immediate surgical treatment. The technic varies among different surgeons but all agree upon the cardinal principle of a radical incision to obtain adequate drainage. Many operators make a large crucial skin incision under gas-oxygen anesthesia and completely excise the contents, preserving all skin that is healthy. The cavity left is packed with gauze and Dakinized until clean. Recently at the Post-Graduate Hospital the writer has attempted sterilization of the multiple abscesses by electric coagulation with several excellent results. This treatment is relatively painless and no anesthetic is necessary. Exsection of the infected zone, when required, was performed with the endotherm knife and better results were thought to obtain.

Diabetic gangrene occurs most frequently in patients who have suffered from a mild diabetes for many years. It is uncommon in young individuals and is seen in those past fifty who have a concomitant arteriosclerosis. Many cases of so-called diabetic gangrene are really instances of senile or arteriosclerotic gangrene. Clinically we classify the dry gangrene as arteriosclerotic and the moist gangrene as diabetic.

Prophylaxis: Gangrene usually affects the lower extremities, beginning in the toes or sole of the foot or on the heel. The first sign of impending danger is often a paresthesia or a trophic disturbance. This is a warning of imminent danger. If in the toes, the feet should be kept scrupulously clean by daily prolonged warm bathing, the nails carefully cut and any corns or bunions kept soft with lanolin. Wool socks should be worn with properly fitting shoes. Caustics and strong antiseptics should be avoided. Infra-red rays are helpful. Often the first lesion is a small blister. In these cases the patient should at once be ordered to bed and kept in bed, the part elevated and kept continuously warm. If the blister persists, its contents should be evacuated and a mild antiseptic dressing of Dakin's solution or Dichloramine-T applied.

If actual gangrene develops and the parts remain dry and there is no redness of the surrounding skin and no signs of lymphangitis, expectant treatment may be maintained. The dorsalis pedis, popliteal and femoral arteries are carefully palpated for pulsation and compared with those of the opposite leg. The acidosis and hyperglycemia should be rigidly controlled. Occasionally, and in *dry* types only, Nature will indicate its line of demarcation and the site for amputation. However, in the moist (most common) type of gangrene, in which there is redness of the surrounding skin and a beginning lymphangitis, immediate surgery is imperative. Temporization with these cases usually results in death from septicemia or bronchopneumonia.

In wet gangrene of the toes or sole of the foot it seems radical to propose amputation above the knee, but those with early high amputation have a mortality correspondingly low. The lymphatics are infected higher in the leg than the lesion would indicate and an upper calf amputation usually ends in an infected wound and is fraught with grave danger. A mid-thigh amputation performed promptly produces the best results. In cases where there is extensive lymphangitis, the stump should be left wide open. A blood culture should be taken in all cases.

Whereas coma was once the principal cause of death in the diabetic, with the advent of insulin it has taken second place to diabetic gangrene and its sequelae. This mortality should be materially re-

(Concluded on page 250)

Compression Belt In Gastrointestinal Studies

• Louis R. Wiley, M.D., Roentgenologist to The National Stomach Hospital, Philadelphia, Pa.

IN MANY hospitals and other laboratories, where numerous gastro-intestinal studies are made daily, it is the custom for one man to do the examination under the fluoroscope and the patient is then directed to another with a notation as to the number and manner in which the various films of

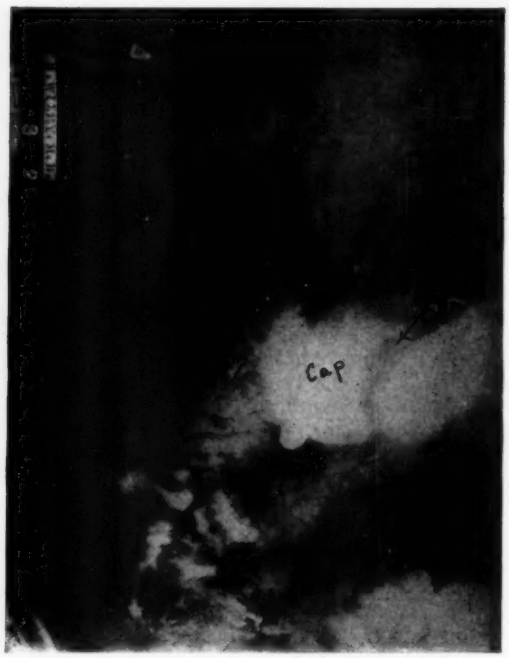

Fig. 1

the stomach are to be made. This makes for speed in the handling of a number of patients, but does not furnish all of the desired information possible to be obtained by means of an x-ray study.

The following case demonstrates the above statement. Here we have under the fluoroscope a normal appearance of the walls of the stomach in various directions. The pylorus filled well and was normal in outline. The duodenum appeared larger than normal, and on its superior border we observed the presence of a filling defect which simulated a duodenal ulcer. On the inferior surface we observed a projection which suggested the presence of a diverticulum at this point. See Fig. I.

A compression belt, with a rubber bag which may be inflated, was placed over the pyloric end of the stomach and the first and second portion of the duodenum, and inflated. It was noted that the defect which simulated the presence of a duodenal ulcer on the superior surface of the cap became smooth and we were unable to demonstrate its presence in any direction. The diverticulum which appeared to be on the inferior surface of the cap was definitely demonstrated to be on the inner side of the second portion of the duodenum. See Fig. II.

The compression belt, with the small rubber bag which can be inflated, is excellent for examination

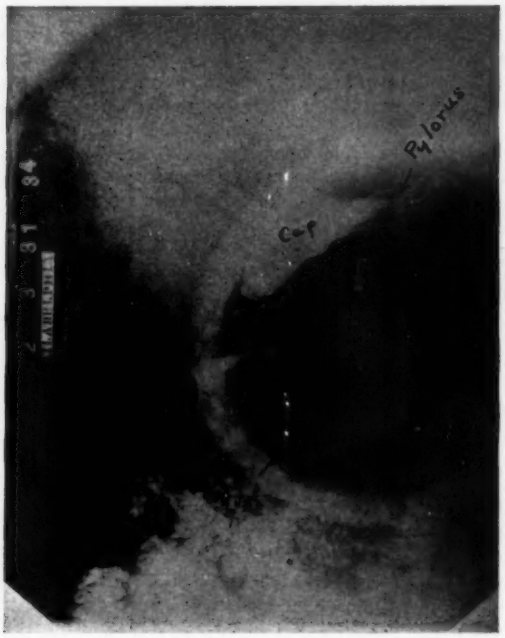

Fig. 2

of the mucous membrane of the stomach and duodenum. It aids greatly in demonstrating the presence of ulcers in the cardia and on the posterior wall of the stomach, and in differentiating the ulcer from adhesions simulating ulcers in the duodenum.

1509 North 15th Street.

From the National Stomach Hospital, Philadelphia, Pa.

Surgery in Diabetes

(Concluded from page 249)

duced by insistence upon unremitting prophylaxis and prompt high amputations in cases of wet gangrene with lymphangitis.

14 East 68th Street.

Filing a Complaint

Old Lady: "I've been expecting a package of medicine by mail for a week, and haven't received it yet."

Post Office Clerk: "Yes, madam. Kindly fill in this form, and state the nature of your complaint."

Old Lady: "Well, if you must know, it's stomach trouble."

Cancer

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The Clinical Conference on Cancer

Held at the Strong Memorial Hospital, Rochester, N. Y., at the Ninth Annual Meeting of the New York State Committee of the American Society for the Control of Cancer, Inc.

The Present Status of the Cancer Problem as Observed in the Rochester Hospitals

3. CANCER OF THE STOMACH

By W. J. MERLE SCOTT, M.D., F.A.C.S.
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EVERY physician knows that carcinoma of the stomach offers a gloomy prognosis. What we need to realize equally, however, is that we have made definite progress in the treatment of this common and rightly dreaded condition and that we surely can make still further advancement by the application of knowledge already available to us. A few years ago gastric carcinoma was regarded as invariably incurable. Today we know that this is not the case.

In order to get an accurate conception of the present status of this problem, and especially in order to find how in the future we may get better results in gastric carcinoma, all cases with this diagnosis in three large Rochester hospitals during the years 1931-32 were analyzed. In all cases included, the diagnosis was positively made by operation or at autopsy, or else it was very sure from characteristic x-ray findings. Doubtful cases and those with insufficient data for diagnosis were excluded from this study. Sixty-nine cases of such verified or almost certain carcinoma of the stomach were assembled. Table 1. These fell into three groups as follows:

1. Those hopeless for cure at operation 26 cases (38%)
2. Those who had resection of the stomach 10 cases (14%)
3. Unoperated cases 33 cases (48%)

Table I

Review of Carcinoma of Stomach, Year 1931-32 (From 3 Rochester Hospitals)

	TOTAL CASES 69		
I	Hopeless for cure at operation	26	(38%)
	A. Exploration and biopsy only	21	
	B. Palliative Gastroenterostomy	5	
II	Resection of Stomach	10	(14%)
III	Unoperated	33	(48%)
	A. Operation Refused	6	
	B. Operation not advised	27	
	Total number of patients who had any chance for cure on admission	16	(23%)
	DURATIONS OF SYMPTOMS		
1.	In resected cases	3.5 mo.	
2.	In cases found hopeless for cure	13.5 mo.	

In the unoperated group, six cases were advised to have operation but refused, while in twenty-seven cases, operation was not advised either because the disease was obviously hopeless or because the general condition of the patient did not warrant operation (especially old age). In this series of sixty-nine cases, only sixteen (23%) proved to have any hope of cure when first seen in the hospital. An interesting light is thrown upon the smallness of this latter group by the following fact. Those ten patients in whom resection of the stomach was carried out had symptoms for an average duration of 3.5 months before admission to the hospital, while in the twenty-six cases found hopeless for cure at operation, symptoms had been present for an average period of 13.5 months. This fact demonstrates the most fundamental principle in the treatment of carcinoma of the stomach. It can be stated as an axiom, namely, EARLIER TREATMENT IS ESSENTIAL FOR IMPROVING OUR RESULTS IN CARCINOMA OF THE STOMACH. In order to achieve this, it is necessary that a definite diagnosis of the disease or suspicion of its possibility be reached at an earlier date than has usually been the case in the past.

Carcinoma of the stomach does not by any means present the same or even similar symptoms in all cases. In fact we can divide patients with carcinoma of the stomach into several groups, according to the type of symptoms which they present. At least in certain of these groups can carcinoma of the stomach be suspected and definite procedures inaugurated to verify or rule out the suspicion at a much earlier time than is commonly being done at present. Let us then consider the groups into which gastric carcinoma falls according to its symptoms.

SYMPTOM TYPES OF GASTRIC CARCINOMA

1. Asymptomatic
2. Dyspeptic (change in digestive or bowel habits)
3. Ulcer-mimicking
4. Obstructive
5. Anemic
6. Cachectic
7. Metastatic

Frequently symptoms of two or more groups will occur in the same patient, either initially or successively. The following cases from our series illustrate the more important of these groups.

ASYMPTOMATIC

Case 1. J. T. 44276 Age 47 1931. Epigastric pain—two weeks. Vomiting. Weakness. Large mass in epigastrium. R.B.C. 2,700,000. Hgb. 45%. Inoperable carcinoma of stomach on exploration.

DYSPEPTIC

Case 2. H.G. 51098 Male Age 65 1931. 4 yrs. dyspepsia. Increasing in frequency and severity. Anorexia. Bloating after meals. Weight loss 53 lbs. in six months. Examination—mass in epigastrium. R.B.C. 2,400,000. Hgb. 40%. Stool—Guaiac two plus.

Ulcer-Mimicking

Case 3. F. B. 49520 Male Age 54 1931. Two years epigastric pain and gas after meals; relief by food or soda. Weight loss 25 lbs. Stool—Guaiac O (repeatedly). Gastric analysis—no free HCl. G. I. X-ray—doubtful. Repeat—diagnosed duodenal ulcer. Favorable response to treatment. Two years later returned with abdominal carcinomatosis.

Case 4. E. D. 43858 Female Age 43 1931. Twenty-two months—ulcer pain, food relief, weight loss. Fifteen months—Sippy diet with relief of pain and 15 lb. gain in weight. Twelve months—gradual return of pain. Three months—severe. Carcinoma of stomach with peritoneal carcinomatosis.

Obstructive

Case 5. F. C. 63702 Female Age 69 1932. One year—vomiting without nausea. Seven months—anorexia, weakness, fatigue. Two months—epigastric pain, weight loss 40 lbs. in one year. Inoperable carcinoma of stomach.

Anemic

Case 6. J. B. 40639 Female Age 64 1931. Six weeks—pain and swelling in legs, weakness, dyspnea, gas, constipation. R.B.C. 2,100,000. Hgb. 35%. Stool—tarry. Exploration—hopeless carcinoma of stomach.

Having seen that cases of carcinoma of the stomach fall into definite groups according to their symptoms, let us investigate these groups, particularly with a view to suspecting the possibility of carcinoma of the stomach and initiating the proper diagnostic or therapeutic measures. Obviously the patients that are truly *asymptomatic* before a totally inoperable carcinoma is found to be present offer for the present an almost hopeless problem. Since they have no symptoms, only routine regular x-ray examinations of the stomach after a certain age would be of much help in finding these lesions at present; and this is too costly a procedure to expect any considerable portion of the public to employ it as a routine measure. Fortunately, however, this group is relatively small; probably only about ten per cent of the patients are truly asymptomatic.

Most of the patients with carcinoma of the stomach have some *dyspeptic* symptoms, that is, there is some change in digestive or bowel habits from those normal for that individual. This change may be slight and require careful questioning to determine; it often is of rather insidious origin so that the patient pays little attention to it or the physician thinks little of it when the patient consults him. The following, however, is an important axiom in the diagnosis of gastric carcinoma—ANY PERSISTENT CHANGE IN DIGESTIVE HABITS OF A PATIENT OVER FORTY SHOULD BE INVESTIGATED MOST CAREFULLY TO RULE OUT THE POSSIBILITY OF CARCINOMA OF THE STOMACH. Often the symptoms come on rather insidiously and progress gradually and irregularly until they finally force themselves on the notice of the patient.

A particular type of dyspeptic symptoms sufficiently characteristic and important to constitute a separate group is noted in those cases that *mimic gastric ulcer*. The clinical, roentgenological, even the gross pathological appearance of this type of carcinoma of the stomach may be indistinguishable from benign chronic gastric ulcer. In fact, about twenty per cent of the cases of chronic gastric ulcer prove eventually to be malignant. Consequently another axiom in the diagnosis and treatment of carcinoma of the stomach is, EVERY CHRONIC GASTRIC ULCER IS AND SHOULD BE TREATED AS A CARCINOMA SUSPECT UNTIL PROVED OTHERWISE. It is this ulcer-mimicking group, a fairly large percentage of the cases (from one-sixth to one-quarter), that is most hopeful for a considerable improvement in clinical cures. We have two such patients with maligant gastric ulcers alive and well today, seven and eight years respectively after resection, and several others for shorter periods of years. If the clinician waits until a definite diagnosis of carcinoma of the stomach can be made by the character of the roentgenographic appearance, it is usually too late to cure such patients.

Another subdivision of the dyspeptic group sufficiently characteristic to set apart by itself is composed of those cases presenting chiefly the symptoms of *obstruction*. Here the lesion fortunately is located near one of the sphincters of the stomach, either the pyloric or the cardiac, and consequently causes early interference with the motor function of the stomach. When at the pyloric end of the stomach, this group is relatively favorable for resection. Again, characteristic filling defects observable by x-ray should not be awaited, as the most favorable time is before the nature of the lesion can be determined with assurance before operation.

In another group of patients, the presenting symptoms are those of anemia or gastric hemorrhage. Carcinoma of the stomach is one of the important lesions to be considered in every patient presenting symptoms of unexplained blood loss after the age of forty. In some patients, weakness and *cachexia* are present without evidence of marked blood loss. Weight loss is common in most of the patients with carcinoma of the stomach. Extreme weight loss, however, is a relatively unfavorable symptom and of course where the symptoms are those of *metastases* rather than of the primary lesion, the outlook is again absolutely hopeless at the present time.

After reviewing these groups, it is evident that considerable improvement is possible in several of them, particularly the ulcer-mimicking and dyspeptic groups, in shortening the duration of symptoms before the patient with suspicious symptoms is sent to the hospital for careful diagnostic measures or operative treatment.

Conclusions

Earlier diagnosis is the clue to improving the percentage of gastric carcinoma in which radical cure is a possibility. In order to achieve this, the cooperation of the physician and the education of the patient are needed to suspect carcinoma of the stomach as a possibility in any persistent change in the digestive habits of the patient, however trivial. Particularly must we regard chronic gastric ulcer as potentially malignant until proved to be benign. Also symptoms of pyloric obstruction and of chronic blood loss through the gastro-intestinal tract require a careful investigation of the possibility of carcinoma of the stomach.

Sudden Death from Dinitrophenol Poisoning: Report of Case with Autopsy

Fenn E. Poole and Robert B. Haining, Los Angeles (*Journal A. M. A.*, April 7, 1934), stress the fact that every one who has commented on the used of dinitrophenol has emphasized the importance of restricting its clinical trials to carefully selected cases under constant supervision. However, it appears that the compound is being widely popularized as a weight-reducing agent and is being bought and used with no competent direction. This seems highly deplorable in the present state of knowledge of human responses to dinitrophenol. Thorough and extensive animal experiments have been performed (notably by Tainter and Cutting and by Magne, Mayer and Plantefol) and the toxic effects and the fatal dosage for animals have been accurately determined. This work, however, must not be presumed on too freely in dealing with human beings, and it can have no value whatever in predicting or preventing the occurrence of severe allergic manifestations. There is no antidote for dinitrophenol poisoning. The only measures that have seemed to reduce the mortality in animals have been administration of fluids and cooling baths. In dinitrophenol-poisoned munitions workers, Mayer found that intravenous injections of dextrose constituted the most effective treatment. This seems rational because of the marked loss of tissue glycogen that has been shown to occur. Morphine allays the excitement and the dyspnea and may check the rise in temperature, but it cannot halt the process of intoxication and, in dogs poisoned with dinitrophenol, morphine does not affect the mortality. In the case of sudden death from dinitrophenol poisoning that the authors report, the victim heard of the compound from a friend and bought and used it without competent supervision. A physician was not consulted until a few hours before death. The dosage in this case was high but within the presumed limits of safety, so the fatality should probably be regarded as an example of allergic idiosyncrasy. Before taking dinitrophenol, the patient had been taking desiccated thyroid extract, one-fourth grain (0.016Gm.) three times a day for about one year. The authors do not know whether or how this has significance.

Economics

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CHAIRMAN COMMITTEE ON ECONOMICS OF THE MEDICAL SOCIETY OF THE COUNTY OF KINGS, BROOKLYN

Payment to Doctors a Vague Element in "Uplift" Plans

ONE of the objections of the medical profession to all the plans proposed by social organizations, foundation representatives, wealthy philanthropists and self-appointed committees on medical or labor legislation has been the indefiniteness of terms used when payment to doctors is discussed. Every one of these workers would have the doctors "fairly recompensed." Each one states that in his plans the doctors would be "adequately remunerated." Some of them announce that in their schemes many doctors "would get more than they at present receive." Laws have been submitted to legislatures providing in what ways and in what amount moneys should be collected, and specifying that after the payment of fixed sums to the executives, sick benefits to the insured, and hospital care and equipment for sick or injured, the doctors would be alloted proper sums from what remained. The American College of Surgeons, which goes wrong so often on economic questions, follows the lead and now announces that "the compensation of the physician and of the hospital should be estimated with due regard to the resources available in the periodic payment fund . . . ." When, to make discussion easier, definition of terms used is sought, there is woeful silence or a sidestepping of the question. The success of the insurance plan in Great Britain is always immediately proclaimed. In this country it is claimed that the reduction of overhead would be in reality money earned, and that surcease of worry over income regardless of its amount, fewer hours of daily work, and long annual vacations would be assets that would compensate for the small money income. No one has publicly stated that thanks to the depression very many doctors are already possessing such assets and with not too much appreciation.

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Actual money to be received by the doctor is rarely stated—still more rarely made an essential of proposed schemes. There are admittedly, on the doctors' side, too many unknown or uncertain factors. There are some factors, however, in all the plans on which there is agreement by all proponents. In all the financial parts of the plans the medical profession may have no voice. The methods of raising funds, of distributing them, and the details of this supervision and administration must be left entirely to lay people. Doctors are not to be permitted, nay, *must* not be permitted to have any influence in financial matters beyond accepting what they are given, though there can be no objection to representatives of social organizations, political parties, government bureau heads or aggregations of wealth constituting the governing boards.

As exceptions to the general rule, a few—very few—of the plans proposed for payment to doctors contain some slightly definite terms. The Committee on Costs of Medical Care believed that health insurance in this country would bring to the general practitioner more than the $2,500 per year and to the "complete specialist" much less than the $10,000 per year which were lately the averages. Another writer supports the proposition that the rate of pay should be similar to that of our Army or Navy, and that a properly qualified and accredited physician should receive upon entering his lifework $2,200 a year. After a varying number of years, with regular examinations, the pay would be gradually increased until finally one man—but only one at a time—in charge of the health of the entire population of the United States would receive the highest amount, about $7,000 a year. Another has pictured in glittering terms the satisfaction of work in the industrial world and the joy of beginning full time work at $1,900 per year with a steady incentive for most doctors of a possible $2,700. Again, it is suggested that doctors would receive under some socialized plans the same salaries as teachers in the Departments of Education. President Flaherty of the Medical Society of the State of New York, on the other hand, in his recent address, has shown the great number of teachers in the country receiving $700 a year, others $500 a year, and how many were out of employment. He might have included the thousands of young teachers who have successfully completed their training and have waited long for positions.

Another welcome exception to the rule of indefiniteness in money terms has been a writer in the *Survey-Graphic* (John A. Kingsbury in *Survey-Graphic*, Vol. XXIII, No. 6, June, 1934). Representing the Milbank Foundation, as he does, in urging compulsory health insurance for all families receiving less than $5,000 a year income, he states that in any method of payment "the general practitioner could be paid a sum equivalent to at least $7.50 per insured person per annum. Thus the general practitioner who serves 1000 potential patients would receive a gross income of something like $7,500 . . . ." The multiplication is perfect and clear, which is more than can be said of all the words in this writer's sentences.

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An interesting thought arises in regard to the mental process by which the proper compensation for doctors is reached. No plan carries an income based on the present-day value of the services rendered. No one has even suggested that incomes be based on the value of the services rendered. Reduction by physicians of mortality or morbidity are reasons not for increased compensation but for decrease in salaries or in the number of doctors engaged. The Committee on Costs of Medical Care reported that the $2,500 average net income should be increased. Why it should be increased, how much it should be increased, or why not decreased the report did not say. Doctors doing health insurance work in England receive for a thousand potential patients a net sum in our money between $700 and $1,000 yearly. Industrial corporations, including accident insurance companies, seem actuated by the standard rule of the "Old Deal" in business to use every lawful means to secure medical services at the lowest possible price. Political groups, too, have ever cried that if the doctors rendering service are not satisfied with the terms dictated to them, there are other doctors ready to at once displace them. When other reasons fail doctors are forcefully reminded that "adequate" compensation is received by them in experience gained, in prestige, in opportunities to do more unpaid or poorly paid work, in the permission to engage in research, or that the medical profession should ever continue its charity to the indigent and that any sum, no matter how small, "is very much more than nothing at all." If the care of the indigent sick is a responsibility of the community, and not of the medical profession, the community may no longer ask that profession to render its services at indigent rates. The question of *ability* to pay should be removed from

(Concluded on page 261)

Contemporary Progress

Rhinolaryngology

Contact Allergic Coryza

J. Forman (*Archives of Otolaryngology,* 19:367-369, March, 1934) has found that the vast majority of cases of vasomotor rhinitis or allergic coryza will prove to be atopic, although in some instances many tests must be made to determine the atopen; occasionally this will be found to be a bacterium. In some cases, however, the symptoms are those of allergic coryza; the blood and nasal secretions show an increase of eosinophils; the nasal mucous membrane is pale; yet complete skin tests for protein sensitization are negative, and there is no family or personal history of asthma, hay fever, hives and other typical manifestations of atopy. Such cases may prove to be what the author calls "contact allergic coryza" because it closely resembles contact dermatitis—a local contact sensitization to some chemical. When the atopic form of allergic coryza is eliminated by suitable tests and contact allergic coryza is suspected, the history of the case is of great importance in diagnosis. Frequently the patient is suspicious of a certain agent; sometimes the occupation of the patient suggests the offending substance. For many years it has been recognized that the smell of volatile oils or perfumes causes an acute coryza in some persons; chemists and druggists have also noted this reaction to certain chemicals with which they come in contact frequently. The method of diagnosis in such cases is the spraying of properly diluted solutions of the suspected materials into the nose; this may be a slow and tedious process as only one substance can be tested at a time. The only treatment possible in these cases at present is the strict avoidance of the offending substance when it has been definitely identified. The author presents an outline of diagnostic procedures for the differentiation of the various kinds of coryza.

A New Method for the Treatment of Chronic Sinus Infection

F. C. Kracaw of Oakland, California (*California and Western Medicine,* 40:228-233, April, 1934), describes the treatment of subacute and chronic sinus infection by hypodermic injections and local applications of autogenous antigens and lysates prepared according to the methods of A. P. Krueger of the University of California. The cultures for the preparation of the endoantigens are taken in the usual way from the nasal tract in each case, and the pathogenic forms isolated; the solutions are standardized on the basis of nitrogen content. For hypodermic treatment the weaker solution is first used, and injections are given three times a week. The first dose is 0.1 c.c. intradermally and 0.1 c.c. subcutaneously; these two injections are usually given in separate areas, two or three inches apart. The intradermal dose remains the same; the subcutaneous dose is increased as rapidly as possible to the maximum, usually from 0.5 to 0.8 c.c. Dosage must be individualized for each patient, the increase (or decrease) regulated according to the general and nasal symptoms; general reactions are never severe, but results are best when they are avoided entirely. Four or five maximum doses of the weaker solution are given, and then the stronger solution is used following the same procedure. The entire course of treatment requires ten to fourteen weeks. At the same time the lysate is applied locally to the nose and sinuses involved. If the posterior sinuses are involved, the Proetz displacement method is used; the antra are reached by direct injection. Some local reaction usually follows the first three or four nasal applications; and the discharge increases in amount and becomes purulent at first, as the response of the tissues is phagocytic in nature. Later the discharge becomes clearer and diminishes. The author reports 45 cases treated by this method; in this series the ethmoid sinuses were most frequently involved, the maxillary and sphenoid sinuses next in order of frequency. The predominating organisms were *Staphylococcus aureus* (38 cases) and *Streptococcus* (26 cases). In some cases there was no improvement until the seventh or even the tenth week, but in most instances improvement was seen by the fourth week. Only 2 patients (5 per cent) showed no improvement; in 13 cases (29 per cent) symptoms were improved but the discharge continued; in 13 cases symptoms were much improved and discharge greatly diminished; while 17 cases showed complete cure; thus giving good or excellent results in 66 per cent of cases.

The Relation Between Ozena and the Cervical Sympathetic

P. Krampitz (*Archiv für Ohren-Nasen-und Kehlkopfheilkunde,* 138:107-118, May 17, 1934) reports that in 2 cases of ozena of long duration a cervical sympathectomy was done with removal of the superior cervical ganglion in each case; in one case both sides were operated in two stages. While there was some improvement in these cases —especially diminution in crust formation—after operation, the author does not consider that the therapeutic value of this procedure in cases of ozena of long standing is demonstrated. A study of three cervical ganglions, however, showed definite pathological changes in all three consisting of a round cell infiltration. This indicates, in the author's opinion, that a long continued irritation of the cervical sympathetic results in a vasoconstriction and trophic disturbances in the nose, which may be regarded as the true cause of ozena. What causes the inflammatory reaction in the cervical ganglion cannot be determined; it may be some obscure infection in childhood; and there may also be a congenital predisposition to disturbances of the vegetative nervous system.

Pathologic Changes in the Human Tonsil in Relation to Clinical Findings

R. S. Jason (*Archives of Otolaryngology,* 19:600-606, May, 1934) reports a study of the tonsils obtained in 35 consecutive tonsillectomies at the Billings Hospital and in 5 tonsillectomies done in one day at the Children's Memorial Hospital, Washington, D. C. There was little evidence in this series of the transformation of lymphocytes in the tonsil into macrophages, which may be accounted for by the fact that none of the patients had acute inflammation of the throat at the time the operation was done. The patients were classified in three groups on the basis of the clinical histories and physical findings as follows: 1. Fifteen patients whose tonsils were removed for local reasons only; 2. Ten patients whose tonsils were removed

for the eradication of foci of infection; 3. Twelve patients whose tonsils were removed for both local and focal reasons. Three patients could not be classified on the basis of the available records. In the first group hyperplasia of the lymphoid elements of the tonsil was the most striking feature. The tonsils of the second and third groups—those with systemic disease or disease elsewhere in the body, showed more marked pathologic changes in the tonsils and more fibrosis than those in the first group. These lesions were of a type that would favor the entrance of bacteria from the crypts into the systemic circulation. These two groups showed a definitely lower incidence of infection of the upper respiratory tract and cervical lymph node enlargement than the first group—all of which is in accord with the clinical observation that often small, "silent and buried" tonsils are more to be feared as a focus of infection than large and obviously inflamed tonsils.

Curability of Carcinoma of the Larynx

G. B. New and John M. Waugh (*Surgery, Gynecology and Obstetrics,* 58:841-844, May, 1934) report a follow-up study of 107 cases of carcinoma of the larynx operated at the Mayo Clinic prior to 1928. In 34 of these cases thyrotomy was done with 28 five-year cures, 82.3 per cent. In 73 cases laryngectomy was done with 41 five-year cures, or 56.1 per cent. The percentage of five-year cures for the entire series of 107 cases was 64.5 per cent. The cases in which thyrotomy was done were early carcinomas involving the anterior two-thirds of the vocal cord; the growth was excised and the base destroyed by diathermy. The voice is usually good after thyrotomy. In patients in whom laryngectomy is done, patients are supplied with an artificial larynx made by Dr. Sheard of the Clinic, which gives very satisfactory results, as it has been found that only a small percentage of patients learn to talk by using the pharyngeal muscles. The experience of the Mayo Clinic, as indicated by the above statistics, shows that the relatively conservative operation of thyrotomy is entirely justified in early carcinoma of the larynx; also that as compared with carcinoma in general, carcinoma of the larynx shows a high percentage of five-year cures, while it has a low operative mortality (less than 1 per cent).

Otology

The Pathology of High-tone Deafness

S. J. Crowe, S. R. Guild and L. M. Polvoot (*Bulletin of Johns Hopkins Hospital,* 54:315-379, May, 1934) report a study of the pathological changes in 79 ears in which audiograms during life had shown impairment of hearing for the high tones only. As a control the lesions found in the middle and inner ear in cases showing good hearing for all tones (about 200 ears) were used. Three-fourth of the ears with impaired hearing for high tones showed lesions of the basal turn of the cochlea more severe and extensive than any of the control group. Where the audiogram was of the "abrupt" high tone loss type, the characteristic lesion was an area of atrophy of the organ of Corti more than 2 mm. from the basal end. Where the audiogram was of the "gradual" high tone loss type, the prominent lesion was a partial atrophy of the cochlear nerve supplying the basal turn. There were some exceptions in that some of the ears with the abrupt type of hearing loss did not show an atrophy of the organ of Corti; and some of the ears with the gradual type of hearing loss did not show a sufficient nerve atrophy to account for the loss of hearing. In approximately one-fourth of the 79 ears, there was no lesion in either the internal or the middle ear sufficiently marked to explain the loss of hearing. The hearing loss was less in these cases than in the group as a whole and the authors suggest that in these cases there may either be early pathological changes in the cochlea not demonstrated by the histologic methods used or lesions "in the central auditory pathways." Middle-ear lesions were not infrequently found in the control group; only 7 of the 79 ears with loss of hearing for high tones showed more severe middle-ear lesions than the control group; in all these 7 ears cochlear changes were sufficient to acocunt for the loss of hearing.

Gross Pathological Changes in Mastoids in Acute Suppurative Otitis

A. P. Tibbetts (*Laryngoscope,* 44:369-372, May, 1934) reports a study of the gross pathological changes in the mastoid in 2 cases of mastoditis that came to operation. The ages of the patients ranged from five to fifty-eight years. There were 16 cases of acute mastoiditis operated on the third to the twelfth day after the onset of the acute otitis media. Four of these showed discoloration and softening of the periosteum and cortex—the earliest on the eighth day. Four showed sclerotic mastoids; all the 3 acute cases that developed complications were in this group. Hyperemia, pus under pressure, polypoid formation and softening of the septa were found as early as the third day in two children aged six and fourteen years respectively; actual breaking down with cavity formation was found as early as the fifth day in a child of five. A rather constant finding in this acute mastoiditis group from the sixth day on was the presence of a large firm mass of polypoid tissue almost completely blocking the mastoid antrum; clinically this corresponded with a decrease in the ear discharge. There were 9 cases with subacute mastoiditis operated on the eighteenth to the fifty-fifth day after the onset of acute otitis media. Free pus, polypoid formation and softening of the septa were present in all these cases; necrosis of the bone with exposure of the lateral sinus was present in 2 cases. Two cases showed sclerosis of the mastoid and one of these developed a complication (Gradenigo's syndrome); the only other complication in this subacute group was acute labyrinthitis; both cleared up after the mastoid operation. On the basis of these findings the author emphasizes the folowing practical points:

In acute mastoiditis, marked pathological changes may be present in the mastoid as early as the third day; bone destruction is more rapid in the younger than in older patients. Complications are most apt to occur in sclerotic mastoids; this type of mastoid is readily demonstrated by the x-ray, and may be considered an indication for early operation. A sudden decrease of discharge from the ear, if the drum is freely open, with an exacerbation of clinical symptoms, indicates a complete blocking of the mastoid that can be relieved only by operation. Patients who show signs of mastoid involvement as late as the eighteenth day after the onset of acute suppurative mastoiditis, even without x-ray evidence of marked bone destruction, have sufficient pathological change in the mastoid to make operation necessary.

Fatal Complications of Otitis Media

C. B. Courville and J. M. Nielsen (*Archives of Otolaryngology,* 9:451-501, April, 1934) report a study of fatal complications of otitis media in 10,000 autopsies with special reference to the intracranial complications. Death can not be attributed to the otitis and its complications in all cases in which otitis media is a terminal lesion. Thus in the last 5,000 autopsies in which a more detailed study was made, there were 303 that showed otitis media, but only 94 had an intracranial lesion of sufficient gravity to cause death. Most of the other subjects with terminal otitis were infants under one year of age, intracranial complications of otitis being less common in this age period. Extradural abscess and meningitis were found to be the most frequent intracranial complications of infection in the petrous pyramid. In this series there were 17 cases of subdural abscess associated with otitis media, and in 15 of these the abscess was due directly or indirectly to infection of the middle ear. There were 69 cases of otogenous thrombosis of the cerebral sinuses and veins, 35 of which were thrombosis of the lateral sinus, and 10 thrombosis of the cerebral veins. There were 128 cases of otogenous leptomeningitis, 89 of which were of the primary type, according to Goerke's classification. There were 35 cases of otogeneous brain abscess, 23 of which were cerebral and 12 cerebellar. Of the 23 cerebral abscesses, 17 were in the temporal lobe; 11 of these had other intracranial complications, 7 of them meningitis alone. In the 12 cases of cerebellar abscess, all but 4 had some other intracranial complications; multiple abscesses were found in 2 of these cerebellar cases, secondary to meningitis in one case and to local subdural abscess in the other. The authors outline a method for the removal of the brain and the study of the intracranial contents of patients dying of complications of otitis media.

Brain Abscess of Aural Origin

K. W. MacKenzie (*Journal of Laryngology and Otology,*

49:357-374, June, 1934) notes that brain abscess of aural origin occurs so rarely that "an aural surgeon is very fortunate indeed if he can collect fifty cases in a life time." The author reports 8 cases of brain abscess complicating otitis media operated by him. Seven of these complicated chronic suppurative otitis media; 4 of these 7 cases were temporo-sphenoidal abscesses, and 3 cerebellar abscesses. Six of the eight cases were drained at operation and all recovered, a recovery rate of 75 per cent; of these 6 cases, 3 were cerebellar abscesses. In one a decompression opration was done, and before a final operation for drainage of the abscess could be done, the abscess burst into the ventricle, causing death; in the other fatal case the abscess was not found at an exploratory operation, but subsequently burst through the surgical wound. These brain abscesses occurred in the years 1925 to 1933, in which period there were 224 cases of chronic suppurative otitis media admitted to the ward for mastoidectomy; during the same period there were 481 cases of acute mastoiditis, but none of these were complicated by brain abscess. The author notes two points in his technique in operating these cases which he believes contributed to the good results. He postponed operation until pressure symptoms had become well marked, by which time a local tissue immunity has developed; thus delay also renders discovery and drainage of the abscess relatively easy. He drained through a trephine opening and not through the mastoid; he finds this method provides less tortuous and freer drainage. In exploring for abscess he finds it an advantage to use angular forceps, as the blades can be expanded and allow the pus to escape; in the case in which the abscess was not found, a probe was used.

Aural Discharge

J. F. O'Malley (*British Medical Journal*, 1:741-748, April 28, 1934) classes aural discharges as watery, purulent, hemorrhagic, and ceruminous. Watery discharge may indicate the early stage of middle ear catarrh with perforated drum; or a meatal eczema. Purulent discharges indicate acute or chronic suppurative otitis; furunculosis or sometimes a foreign body. The discharge of acute middle ear suppuration is more copious than that of chronic suppuration and sticky; chronic suppuration has a scanty yellow discharge, not sticky. Hemorrhagic discharge when not due to injury may indicate acute influenzal otitis media; granulation tissue, polypi, etc., or epithelioma of the meatus.

Gynecology

Hormones and Pathological Changes in the Breast

Dean Lewis and C. F. Geschickter of Johns Hopkins Hospital (*American Journal of Surgery*, 24:280-304, May, 1934) report a study of 600 cases of chronic cystic mastitis. They distinguish two types, one in which cyst formation predominates, which is designated as cystic disease of the breast, and one in which epithelial hyperplasia predominates, designated as adenosis of the breast. In their series of cases, the larger cysts (in cystic disease of the breast) developed in the mid-zone of the breast, therefore in the secondary system of ducts—the lactiferous tubules, rather than the acini. The majority of the nodular areas of adenosis were found at the periphery, involving the acini primarily. In both types, the nodules varied in size, tending to grow larger just before the menstrual period. The essential pathological differences between the cystic disease and adenosis of the breast are that the former affects the preformed structures, the ducts and the tubules, the latter the terminal ends of the tubules from which new acinar elements develop; and that cystic disease is essentially "a ripening process" with increase in the thickness of the adult epithelium of the ducts followed by liquefaction and desquamation resulting in dilatation of the duct system; and adenosis is essentially a proliferative process with the formation of a number of new and incompletely differentiated elements in the region of the terminal tubules' acini. From a comparison with the changes in the breast tissue in women at various known periods of the menstrual cycle and of pregnancy, and the changes in breast tissue produced in animals by the injection of theelin (from the ovarian follicle) or theelin and progestin (from the corpus luteum), the authors conclude that: Histologically the changes in cystic disease of the breast and adenosis are similar to changes resulting physiologically from variations in the amount or periodical discharge of the ovarian hormones (theelin and progestin); these pathological states of the breast result from alteration in the character, amount or periodic discharge of these ovarian hormones; and the two pathological types—cystic disease of the breast and adenosis—representing pathological maturation and pathological proliferation, correspond to the two distinct effects of the two ovarian hormones.

John Funké (*Medical Journal and Record*, 139:598-599, June 6, 1934), in a study of areas of chronic induration of the breast, has found that they are associated with symptoms of anterior pituitary deficiency—irregular menstruation, headaches and vertigo—and disappear on the administration of extract from the anterior lobe of the pituitary. These areas of induration in the breast are freely movable, tender and often very painful, and usually diffuse, some times involving both breasts. In some patients, especially younger women, such induration appears only at the time of menstruation; in others it is permanent. Injections of the anterior pituitary extract are given in the arm, on the same side as the breast affected or most affected. The indurated masses disappear promptly under this treatment, the author has found; but as a rule the treatment must be continued for some time, or repeated from time to time for a considerable period in order to effect a permanent cure.

COMMENT

Pathological changes in the breast due to endocrine dysfunction are not very well understood, even to the endocine specialist. It seems clear, therefore, that the general practitioner or general surgeon had better "try out" standardized methods of handling these breast cases, plus endocrine therapy coupled with intelligent observation, before resorting to operative measures for indurations ("caked breasts") and cystic tumors of the breasts. Operations, excision of pathological areas, or amputation, are far too disfiguring to be indulged in on "first sight." Intelligent conservatism is perfectly safe and should be practiced until endocrine therapy is given a fair trial—particularly the administration of anterior pituitary extract.

H. B. M.

Histogenesis of Ovarian Cysts

D. H. MacLeod (*Journal of Obstetrics and Gynecology of the British Empire*, 41:385-389, June, 1934) notes that there have been many theories as to the origin of the various forms of ovarian cysts, although the origin of the simple retention cysts (follicular cysts) is never disputed. His studies on ovarian cysts at the Bland-Sutton Institute of Pathology of the Middlesex Hospital, London, England, has led him to conclude that the Graafian follicles may under certain conditions develop columnar epithelium that may eventually form epithelium-lined cysts. In an ovary removed for multiple chocolate cysts these changes were clearly demonstrable. The columnar epithelium appeared to develop from the deepest layer of the granulosa cells. These cells normally tend to form a regular arrangement in the later stage of development of the follicle. In the sections studied this tendency was more marked; the cells were taller and their nuclei lay at the base. The more superficial cells gradually approached the cavity of the follicle so that a broad clear band was formed between their nuclei and those of the basement cells. The final stage was the extrusion of the superficial cells and the formation of well-marked columnar epithelium. Therefore it seemed possible that the epithelium-lined chocolate cysts in this ovary were formed in this way. Endocrine disturbances and changes in the normal structure of the stroma around the follicle may be responsible for this change in the follicular epithelium. If it is accepted that follicular epithelium may develop into columnar epithelium, then it is possible to explain the origin of cystadenomata and other ovarian epithelial tumors from the follicle. If the granulosa cells can form an epithelium, as shown by the specimens studied, that epithelium may vary considerably in

type, and thus the occurrence of cysts of different type could be explained on this basis.

COMMENT

Since the time of Ephraim McDowell, there have been expounded many theories as to the origin of the various types of ovarian cysts. The epithelial structures contained within the ovary (follicles) can undergo "strange and wondrous" changes—perhaps due to certain hormones liberated in the process of ovulation and menstruation—and it may be from such stimulation that follicular epithelium can be changed into columnar eipthelium and on this basis the occurrence of all cystomata of the ovary could be accounted for. On the other hand, if the granulosa cells of the follicle, under these same stimuli, can form an epithelium, then cysts of various types could be explained on this basis.

This is a complex pathological problem and one of no clinical significance at the present stage of our knowledge.

H. B. M.

Copper Ionization for the Treatment of Leucorrhea in Virgins

D. W. Tovey (*American Journal of Obstetrics and Gynecology, 27*:916-917, June, 1934) is of the opinion that vulvovaginitis in children is due to a cervicitis. The original source of infection is difficult to determine. The infection may be gonorrheal in origin; it may be streptococci, and not infrequently, the author has found, it is due to the colon bacillus. Whatever the cause, such infections in children, if uncured, "light up" at puberty owing to the congestion of the menses, with resulting leucorrhea and often debility. The author has treated 25 such cases of leucorrhea in virgins fifteen to twenty-five years of age by copper ionization. Many of these patients had suffered from leucorrhea for years and had been unsuccessfully treated by douching and topical vaginal applications. Examination frequently, but not invariably, showed erosion of the os, swollen cervix, and a mucopurulent discharge. For the ionization treatments a special speculum is needed consisting of a cystoscopic tube with a handle large enough for the patient to hold. The instrument is introduced and the cervix exposed and swabbed; then a small size copper intracervical electrode is inserted up to the internal os, a large indifferent electrode placed under the back, and from 4 to 10 milliamperes of current given at the positive pole for twenty minutes; the current is then turned off and the negative current used to release the copper electrode. If there is a pinhole os the tip of the copper electrode is pressed against the external os and the negative current used until the os dilates; the current is then reversed and copper ionization with the positive current given for twenty minutes. The treatments cause no pain. The author has had very satisfactory results with this treatment, four to eight treatments being sufficient to cure the cervicitis and relieve all symptoms.

Occurrence of Prolan A and Prolan B in the Urine of Castrated Women

H. C. A. Lassen and E. Brandstrup (*Acta obstetrica et gynecologica Scandinavica,* 14:89-111, 1934) report tests for the two anterior pituitary hormones, Prolan A and B in the urine. The findings of other investigators have indicated that when the ovarian function is impaired or has increased the output of prolan A—the follicle-stimulating hormone—in the urine is increased, while prolan B—the luteinizing hormone—is excreted but seldom and in small amounts. The authors' tests were made on 36 women castrated by the x-rays; and 10 castrated surgically; 343 tests were made in the first group and 93 tests in the second group, about once a month for varying periods. In the group of x-ray castrates, approximately 30 per cent of all specimens gave a positive prolan A reaction; 7 per cent a positive prolan B reaction. The technique employed demonstrated the presence of prolan only in amounts above 400 m.u. per liter. Of the 36 patients, 92 per cent showed prolan A at some time after the irradiation; and 44 per cent prolan B; the B reaction was found most frequently within the first six months. In the 93 tests on surgical castrates, prolan A was found in approximately 50 per cent; and prolan B in 9 per cent. All the 10 patients showed prolan A in the urine at some time in the observation period, and 6 patients showed prolan B. In control cases, the A reaction was positive in less than 15 per cent, the B reaction in 1 to 2 per cent; but 63 patients in the climacteric with one test in each case gave a positive prolan B reaction in 14 per cent of the cases. This confirms the conclusion that the entire absence of ovarian function tends to increase the excretion of the anterior pituitary hormones, both prolan A and B, in the urine.

COMMENT

This work confirms the fact that the entire absence of ovarian function tends to increase the excretion of the anterior pituitary hormone in the urine. The well known Aschheim-Zondek test for pregnancy is based on this fact. The wonder is why such a useful diagnostic procedure was not discovered long before. The modus operandi is very plausible and the detection of excessive quantities of anterior pituitary substance is relatively simple in any well equipped laboratory.

Many seemingly complex problems turn out to be very simple ones in the wake of intelligent persistence.

H. B. M.

Dysmenorrhea as Related to History and Physical Measurement

In a study of dysmenorrhea in relation to clinical history and physical measurements in 14,268 young women students at the University of California, Ruby L. Cunningham (*Western Journal of Surgery, Obstetrics and Gynecology,* 42:274-281, May, 1934) found that 50 per cent of these women had menstrual pain, which was severe in one in six. Compared with the group free from menstrual pain, those with dysmenorrhea more often showed poor nutrition and poor posture; suffered more frequently from constipation, headache, insomnia and functional nervous disturbances; and gave a more frequent history of menstrual irregularity, metrorrhagia, periods of amenorrhea, and leucorrhea. No definite evidence of endocrine dysfunction was found in the women with dysmenorrhea, but the common association of other menstrual disturbances with menstrual pain indicates ovarian dysfunction.

Obstetrics

Determination of the Weight and Age of the Fetus in Utero

S. H. Clifford (*Surgery, Gynecology and Obstetrics,* 58:959-961, June, 1934) has previously described a method for the measurement of the occipitofrontal diameter of the fetal head *in utero* by means of stereoroentgenometry. In this article he presents a graphic method for estimating the weight and age of the fetus *in utero* from the occipitofrontal diameter thus determined. The data presented indicate that the fetus gains weight at the rate of 5 to 6 ounces per week during the seventh and eighth lunar months of pregnancy and at the rate of 8 to 12 ounces per week during the last two months of pregnancy. This determination of fetal size has proved of practical value in the management of cases complicated by toxemia, heart disease or any other condition that might make it necessary to terminate pregnancy before term. Through a knowledge of fetal size, it may be possible to prolong pregnancy till a viable infant is assured, when it might otherwise be terminated immediately. Or if the determination of fetal size shows an infant of adequate size, it may indicate the advisability of induction of labor to avoid the hazards to the mother of a further continuation of pregnancy, and to the fetus of the danger of intrauterine death.

COMMENT

There are times when the size of the baby in utero is most important. Dr. Clifford has devised a very ingenious though rather complicated method of determining the size of the fetus from the occipito-frontal diameter of its head. Such estimations are of value but we wonder whether "experience," good old experience, coupled with intelligent ob-

servation, would not help us enough to judge the approximate size of a given fetus. Let us not depend too much on the x-ray laboratory in such cases.

H. B. M.

The Ketone Content of the Blood in Labor and Pre-Eclamptic Toxemia

D. F. Anderson (*Journal of Obstetrics and Gynecology of the British Empire*, 41:261-266, April, 1934) notes that in the course of ordinary labor with the patient on the usual restricted diet, the intensity of the reaction for ketonuria becomes progressively more marked. In order to obtain more accurate data on the degree of ketosis in labor, the blood of patients was analyzed for acetone and diacetic acid during the progress of labor. Similar analyses were made in a few cases of pre-eclamptic toxemia on a more or less restricted diet, in which there was no evidence of previous renal damage. In all the patients in labor the acetone and diacetic acid of the blood was definitely above normal, although only in one case was labor unduly prolonged. It is probable, however, that the more protracted the labor, the greater is the tendency for ketosis to occur. The development of ketosis in labor is to be attributed to the severe muscular effort involved and the marked restriction of food intake. As there was evidence in the cases studied of an intimate relation between obstetric shock and increased ketosis, the author advises that some carbohydrate be given women during the course of labor, as the usual amount of food cannot, of course, be given. He has found that barley sugar sucked regularly throughout the course of labor is an efficient prophylactic of acidosis. High values for acetone and diacetic acid were also obtained in the blood of patients with pre-eclamptic toxemia. This would indicate, in the author's opinion, that the diet usually given in these cases is inadequate. Even if protein is restricted, a sufficient supply of carbohydrate and mineral salts, especially calcium, should be insured. If there is considerable edema, without a definite increase of blood urea or non-protein nitrogen, the author believes that an adequate intake of an easily assimilable protein is indicated. He advocates the administration of milk in these cases, as a source of both protein and calcium.

It is a well known fact among obstetric specialists that women in labor are not sufficiently nourished—particularly as regards carbohydrates and sugars. I like to "step up" the sugar intake during labor by having the patient eat lump sugar or hard candies freely, besides a fairly good diet of carbohydrates with plenty of water. A woman dehydrated is a poor risk any time and under all conditions. A working horse needs food—so also does a woman in labor, who certainly is working under severe tension with much muscular effort, through which a ketosis rapidly develops if carbohydrates, sugar and water are withheld. Try these prophylactics in your next labor case!

H. B. M.

Relationship Between the Early and Late Toxemias of Pregnancy

J. V. Missett, Jr., (*American Journal of Obstetrics and Gynecology*, 27:697-700, May, 1934) reports a study of the relationship between early and late toxemias in 272 pregnant women registered at the prenatal clinic and delivered at the Kensington Hospital for Women in Philadelphia, Pa. This series included 127 primiparas and 145 multiparas. The incidence of toxemia in early pregnancy was practically the same in both groups; 62 per cent of the primiparas and 60 per cent of the multiparas showed some degree of toxemia in the first trimester, varying in severity from morning nausea and vomiting to hyperemesis gravidarum. Of the 48 primiparas who were symptom-free in the first trimester, 25 per cent showed some toxic manifestation in the third trimester; and of the 58 multiparas who were symptom-free in the first trimester 29.4 per cent were toxic in the last trimester. The three types of late toxemia occurred with about equal frequency in both groups, *i.e.*, elevated blood pressure alone; toxic symptoms alone; toxic symptoms and elevated blood pressure combined. Of the women showing morning nausea and vomiting in the first trimester, 41 per cent of multiparas and 51 per cent of primiparas developed toxic manifestations in the last trimester. In women showing a moderately severe type of early toxemia—nausea and vomiting occuring several times during the day — there was a more pronounced increase in the incidence of late toxemia, as 57 per cent of primiparas and 56.4 per cent of multiparas were toxic in the last trimester. As these findings definitely indicate an increased likelihood of late toxemia in women who have shown toxic symptoms in the early stages of pregnancy, the author notes that it is difficult to explain the fact that the 6 patients (3 primiparas and 3 multiparas) who developed hyperemesis gravidarum in the first trimester, were all free from toxic symptoms in the third trimester. In all these patients in this series the middle trimester of pregnancy was comparatively free from any toxic manifestations. The author suggests that the more frequent development of late toxemia in patients who have had toxic symptoms during the early months of pregnancy may be "simply an extension of a more pronounced reaction to a lowered resistance engendered by the early toxemia."

COMMENT

There is no doubt but that a relationship does exist between the early and late toxemias of pregnancy. The toxins (?) that produce symptoms early are very likely to produce the same or more severe symptoms later in the pregnancy. This is not surprising, particularly when no, or inadequate, prenatal care is given such a case. The same individual carrying the same pregnancy would be expected to create similar toxins early or late, provided no prophylactic measures were instituted, and apparently do so not infrequently when such measures are strictly enforced. Individualization, therefore, is a most important determining factor in the management of these cases.

H. B. M.

Quartz Lamp Irradiation of Perineal Sutures after Delivery

A. Gillerson, G. Hatzkelevitch and I. Rabinovitch (*Gynécologie et obstétrique*, 29:432-436, May, 1934) note that even with careful technique it is often difficult to obtain satisfactory healing sutures of the perineum after delivery. It is their practice to suture any tears in the perineum promptly after delivery, but it is impossible to use dry aseptic dressing in this situation owing to the constant discharge of the lochia and the passing of urine. Since 1931, they have treated the perineal wound by irradiation with a quartz lamp at a distance of 60 to 70 mm. from the genitals with the thighs and knees extended. The first application is given on the second day after delivery for three minutes, subsequent applications for five minutes. The authors have treated 145 cases of perineal tears after suture by this method in women from twenty to thirty-five years of age. Of these, 77 were tears of the first degree, 71 of which healed by first intention; 68 were of the second degree, of which 58 healed by first intention. In a control series of 140 cases not treated by irradiation, there were 85 with perineal tears of the first degree, with 77 healing by first intention; and 55 of the second degree with 39 healing by first intention. In the entire group of 145 cases treated by irradiation 87.4 per cent healed by first intention; and 85 per cent of the second degree tears in this group healed by first intention; of the non-irradiated group, the percentage of primary healing was 80 per cent for the entire group, and 70.9 per cent for perineal tears of the second degree. The relatively large percentages of non-primary healing in this series are due to the fact that the slightest failure to heal, even the rupture of a single suture, is recorded in the non-healing group. The results indicate that quartz lamp irradiation is of value in the treatment of perineal tears after suture.

COMMENT

Irradiation of the perineal suture line by the use of the quartz lamp may be—in fact by all reasoning should be —of value in promoting primary union. However, we

Editorials

Thyroxin Opens a New Era in Ophthalmic Therapy

We are interested to note that Doctor William Browning and Doctor P. Chalmers Jameson, of Brooklyn, communicated to the members of a private group of practitioners, in May of this year, an account of the use, for the first time, of the active principle of thyroid as a local agent and as a metabolic alterative in the eye.

Thyroxin (the active principle of thyroid discovered by Kendall in 1919; the synthetic product developed by Harrison and Barger in 1926) offers an engaging field for ophthalmologic research and experimentation, for if there is anything that the ophthalmologist has desired it is an alterative of definite therapeutic activity, and thyroxin appears to supply the need.

The familiar ophthalmic alteratives, so-called, and their shortcomings, come readily to mind. It would appear that thyroxin promises to amend their deficiencies. Its influence upon incipient lens changes and upon tension in both normal and pathological eyes is a challenging one.

From the cases reported at the aforesaid meeting thyroxin seems likely to find a wide scope as a controlling metabolic factor in ocular work.

There has always been a question as to the direct local absorption of thyroid extracts, but the cases cited at this meeting seem to remove this doubt as far as the clinical administration of thyroxin in the ophthalmic field is concerned, and we understand that Browning and Jameson, in association with the manufacturers of thyroxin, are endeavoring at present to standardize solutions suitable for ophthalmic practice, as the preparations now on the market are intended for oral and intravenous use. At the meeting alluded to they urged great caution in the use of so subtle and potent a drug.

The results of this investigation have been recorded and are to be published in one of the ophthalmic journals at an early date.

Disease as Modified By the Form of the State

We were especially struck by a paragraph in Dr. Henry F. Kramer's article on amebiasis in the May issue of the MEDICAL TIMES AND LONG ISLAND MEDICAL JOURNAL, by reason of its vast social, political and medical implications, and we reproduce it now:

> Mackie has observed that it is the large middle class who are most exposed to infestation, because the very poor do not travel but live in cities where the sanitation, water supply and food inspection are the best. The very wealthy, when they travel, usually secure the most modern sanitary protection. The middle class make frequent trips into the country, often staying at farm houses or camps with an outside privy and where flies are taken as a matter of course. It is through flies that cysts are transferred from dejecta to food—where the handler is not the definite purveyor himself.

In so far as this country drifts toward elimination of the middle class it will see a change not only in the incidence of amebiasis but of all the infectious diseases subject to transfer in the manner described. Under some political set-ups which we have watched of late such a redistribution of classes—and consequently of certain diseases—is on the horizon of things. It seems obvious that under the regimentation that comes with such set-ups there would be practically no moving about on the part of the poor, the rich or powerful would be even more privileged than at present, and the middle class would have shrunk so as not to figure much as disseminators of disease. Perhaps the greatest future triumphs of medicine will hang largely upon such political set-ups; in short, the sacrifice of individualism and group distinctions of the older sort may bring great "progress" along the line in question.

Some British statesman once said that he would rather see England free than sober.

We would rather see the United States sick than regimented.

A Logical Dénouement

Militarism, when carried as an institution to certain absurd lengths, seems naturally to tend toward a homosexual goal. That happened in the Greece of Pericles and John Addington Symonds wrote two illuminating books about it. It has recurred in Germany, which is not at all strange when one considers all the propaganda there in behalf of heroism, masculinity, the camp, the battlefield, and "comradeship," the evocation of paganistic culture, and the lowered caste of woman.

Relief Rolls and the Birth Rate

Dr. Ellsworth Huntington points out that the birth rate among that group of the population on the relief rolls is higher than that of the other groups. It is not clear, however, whether these people are multiplying because they are on the relief rolls or whether they are on the relief rolls because of their multiplication.

In any case, the situation is another proof that in so far as people fall into the lower brackets of the social scale, owing to economic injustice, the birth rate will tend to be unduly high.

The cure for an irrational birth rate is not contraceptives, but social justice.

Social Reform and Medicine

Mr. Harry L. Hopkins, Relief Administrator, hopes to put into effect a scheme of social reform whereby industry, aided by the government, will be decentralized and carried on by small units in rural

districts, thus supplementing the incomes of farmers during certain seasons and removing excess populations from cities like New York. Land and houses at low prices would be sold to the workers on very easy terms. It is expected that employment in industry would be greatly increased and the industrial workers would supplement their incomes from the land. This scheme, which germinated originally in the brain of Henry Ford, would tend to fuse the economic and social interests of farmers and industrial workers.

The removal of excess population from the City of New York would have gratifying results from some points of view. The school system, for example, would profit greatly. The present pressure on our clinic and hospital facilities would be mitigated. But the medical profession would have to make other adjustment that would not be easy.

The plan gives us a good deal to think about and Mr. Hopkins thinks that a portion of the program will be under way by next Winter.

The Milk Marketing of the Future

When perfection is finally attained in the drying and powdering of milk we shall probably see practically all the liquid milk on the market done away with. Two great gains would result from this, the one to the benefit of the milk-consuming public, the other to that of the milk companies.

In the first place, a wholly sanitary and palatable product, with no ifs or buts about it, would be available for public consumption.

In the second place, truck and storage space would be vastly reduced. The handling of milk in car, terminal and store would be reduced to its lowest terms.

This would actually be the set-up now were it not for the fact, as we have suggested in our first paragraph, that certain processes are not perfected, so that palatability, keeping qualities and the integrity of vitamins can be depended upon under all possible conditions.

It is impracticable, without even mentioning cost, to supply all milk consumers with the certified product.

As regards the grades lower than certified, the less said about them the better.

When the time comes, under the planned economy of the future, government and private propaganda will crack down upon those seeking to obstruct the milk program.

We shall then see the birth of a great industry in the rural districts, for the milk will be processed on the spot.

The fluid milk nonsense ought to be terminated in a modern society alive to the realities.

A Cruel Sport?

A while ago there was quite a rumpus over certain cruelties practiced upon race-horses in order, as the case might be, to make them win or lose. There were investigations at many tracks, with prosecutions following.

But what about racing *per se?* Is it not a cruel sport? Has not the physician, watching events at a track, often noted cardiac distress in the horses not always due to temporary dilatation? Has he not seen horses drop on the tracks when forced beyond their physiological capacities? Has he not seen horses die after a race.

The horse is a nervous, sensitive, delicate animal. Which makes us wish to just whisper a query: Is not horse racing a much more cruel sport than bull fighting?

The bull is driven and harried, but then he is killed.

Go to the stall of Sir Dennis or Jack O'Day six or eight hours after a gruelling race, and then decide which sport is the more cruel.

Have the zealous antivivisectionists ever registered any protests against horse racing? As far as we know they have no quarrel with the sport of kings. Let them turn for awhile from the scientist's laboratory. Let them refute, if they can, and if they dare, the implications of this editorial.

The Sidewalks of New York

The spectacle presented by some of our residential districts, with respect to canine filth on the sidewalks, is something to awaken wonderment and disgust. Park Avenue has solved the problem in a way, by taking advantage of certain spaces that happen to be convenient, but in the "Heights" section of one of New York's boroughs one is appalled by the conditions. That section of the town is said to possess a charming quaintness, but one's gait and gaze are so affected by the sidewalk filth that a stroll affords little chance of taking it in. It is said that the inhabitants of the district may be identified by their peculiar gait and gaze, developed into permanent gestures by reason of habitual dodging. Through some strange psychological inversion it would seem that the curious residents of this particular district, far from feeling disgust for the local spectacle, take a kind of defiant pride in it. Taking this for granted, the MEDICAL TIMES AND LONG ISLAND MEDICAL JOURNAL is considering the offer of a prize—a silver dog collar and a scroll of honor — to be awarded annually to that civic ornament of the "Heights" district whose dog or dogs achieve the most decorative and voluminous effects upon the sidewalks of the town.

Miscellany

Naive Letter in the J.A.M.A.

To the Editor—I read in *Collier's Weekly* that at Yamen, Arabia, and in other towns the people buy a bunch of khat, a native herb, sometimes called the flower of paradise, lie down on a rug and pillow in market places for the purpose, and chew this khat, which exhilarates them, and that they do this daily before going to work. Would you inform me just what that herb is and under what name it is known in America?

F. F. YOUNG, M.D., Covington, La.

ANSWER—Khat, Catha edulis of the family Celas-

amcea, is a plant grown in Abyssinia, Arabia and Somaliland. The leaves are chewed or made into an infusion and drunk like tea by the natives of those districts. It is locally known as kat, khat, chaat, kus es salahin, tchaad, tschut, tohat, tohai or gat.

The chewing of the leaves is said to produce a vague sense of stimulation, and the drinking of an infusion of powdered leaves is said to cause a feeling of fulness in the head. It has been suggested that the so-called stimulating effect of small amounts can be felt only by those accustomed to the drug.

The limited experience in the United States with this substance does not justify an opinion as to its possessing habit-forming qualities. A perusal of the literature available, however, reveals nothing which would suggest that the drug has narcotic characteristics.

No extensive pharmacologic investigations have been made respecting Catha edulis. As a matter of convenience, however, the following references have been reviewed:

Mosso, U.: *Riv. clin.* 30: 65, 1891.

Chevaliu: *Bull. gén. de thérap.*, 1911, pp. 161 and 572.

Stockman, R.: *Pharm, J.* 1912, p. 676.

Stockman, R.: *J. Pharmacol. & Exper. Therap.* 4 :251, 1913.

According to Stockman, both the leaves and the wood of Catha edulis contain at least three alkaloids. These have been designated cathine, cathinine and cathidine. Cathidine is the least important, because of its insolubility in water and the fact that it does not form soluble salts. The other two alkaloids are quite similar in action.

Cathine sulphate in large doses produces a marked depression accompanied by paralysis of the voluntary muscles. Smaller doses produce excitement and increase reflex excitability. The alkaloid cathinine is less depressant than the alkaloid cathine.

The substance is not mentioned in any of the federal or state antinarcotic laws.

[We of the West prime the metabolic pump with coffee, the great matutinal accelerator of our industrial system; wherein East and West, despite Kipling, do meet; were there to be a coffee famine we fancy that the industrial system might tend to break down; this is not intended as a hint to the Communists.—Ed. Med. Times and L. I. Med. Jour.]

Contemporary Progress

(Concluded from page 258)

do not think it necessary for the very good reason that for years we have sutured personally or supervised and observed many thousands of episiotomy wounds as well as lacerated perineums with only an occasional "break down." In 1933 at the Methodist Episcopal Hospital in 892 episiotomies and 232 lacerated perineums, all of which were repaired immediately after birth of the child, there were only 6 cases in which primary union did not take place. Why irradiate? Too much apparatus and labor required not to mention possible law suits from burned patients. Something to think about these days!

H. B. M.

Calcium Deficiency in Pregnancy and Lactation

A. M. Mendenhall and J. C. Drake (*American Journal of Obstetrics and Gynecology*, 27:800-806, June, 1934) report a study of 576 pregnant women with regard to calcium deficiency; not all of these women have been carried through to delivery at the time of this report. This study has led the authors to conclude that a rather high percentage of pregnant and lactating women show symptoms of calcium deficiency; and most of these symptoms can be relieved by the administration of calcium and vitamin D. In the authors' cases calcium was usually given by mouth as dicalcium phosphate; if intramuscular or intravenous injection of calcium was necessary calcium gluconate was used. In cases in which blood loss at the time of delivery was estimated, it averaged 346 c.c. in 260 cases not receiving calcium, and 280 c.c. in 280 cases given calcium and viosterol during pregnancy. The incidence of toxemia was definitely reduced in the women receiving calcium, being approximately 1 per cent. Calcium did not appear to be of much value in the treatment of pre-eclamptic toxemia or eclampsia, except that in a few cases of pre-eclampsia in which nephritis was not a pronounced feature, calcium by injection was of definite benefit. In women complaining of muscle soreness and weakness, sometimes with definite muscle spasms and contractures, which are regarded as tetanoid symptoms, the administration of calcium and viosterol gave complete relief in almost every instance; calcium alone or viosterol alone was much less effective. In none of the cases given calcium were there any undesirable effects; a careful study of the babies delivered showed no evidence of overossification of the fetal head. Theoretically it is to be expected that a child borne and nursed by a mother with normal calcium metabolism should develop a normal osseous system; but the infants in this series have not been followed up for a sufficient length of time to demonstrate this definitely.

Economics

(Concluded from page 253)

discussion when the community decides to settle the question.

It is strange that the bankers, industrialists, and big business men who direct and support financially these uplift plans and who would never invest a dollar of their money without using all means to secure proper return on it, plus the return of the principal, plus the salary for directing the business investment, do not apply the same considerations to the money investments of the doctor before he enters upon his professional duties, not to mention the other important non-financial parts of his investment. Even the rates of pay of skilled laborers for their work is not used by these business people as a minimum standard. This section of Mr. John Kingsbury's article and the resolution of the Milbank Fund authorizing further study of medical economic questions may be the expression of a prayerful spirit which will be rewarded with still more light and knowledge.

●

The medical profession is not thinking of the subject of money to be paid doctors under any scheme as of the greatest importance. The competent care of the sick individual—especially of that individual who in our present financial structure is not able to earn the necessities of life, community health with the prevention of spread and with the eradication of communicable diseases, medical care of the aged as well as of infants and school children, the maintenance of hospitals, laboratories and special institutes for research, the training of physicians, and the prompt application to the needy of every advancement in knowledge are problems as anxiously as ever occupying the minds of physicians.

Most law suits against physicians are brought by those to whom the physician has been rather lenient.

If you note the slightest antagonism it is well to call a consultant or step out of the case.

Sick patients dislike the odor of alcohol or tobacco on a doctor.

Study of Treatment in Acute Tetanus

Frederic W. Taylor, Indianapolis (*Journal A. M. A.*, March 24, 1934), points out that the treatment of tetanus with tetanus antitoxin regardless of the route of administration or the amount given has been ineffective in bringing about any marked decrease in mortality. This is remarkable, since the prophylactic use of this serum has achieved such brilliant results. Death in these patients results from exhaustion, spasm of the glottis and convulsion but not from the neurologic lesion produced by tetanus toxin. It is obvious that therapy directed to prevent these conditions is of prime importance. The ideal sedative drug should produce a quiet restful narcosis which is well sustained for a number of hours. Its physiologic effect must not be exhausting on the patient after continued use. Sodium amytal (sodium isoamylethyl barbiturate) has been used in this capacity. Avertin (tribrom-ethanol) has also been used and probably enjoys a greater general popularity. Both of these drugs are relatively safe and give a well sustained narcosis. In nineteen of the author's thirty-seven cases sodium amytal was used intravenously to control symptoms. The tendency was to give amytal only when convulsions become severe. A more rational procedure would be to continue sustaining doses, keeping the patient under moderate narcosis at all times. In this way the patient might entirely escape severe tetanic seizures and large amounts of sodium amytal or tribrom-ethanol would not be necessary to restore a restful sleep. Since the tetanus patient frequently succumbs to exhaustion, all practical supportive therapy must be brought into action. The fluid intake should be maintained at a high level and elimination watched closely. As the patient usually cannot take sustaining amounts of fluid and nutrition by mouth, these elements must be given by other routes. For this purpose the intravenous and subcutaneous use of dextrose solution and physiologic solution of sodium chloride are of invaluable aid. Of the author's series twenty patients died, a mortality of 54 per cent. The amount of antitoxic serum given ranged from 50,000 to 420,000 units. Of twenty-three patients receiving from 50,000 to 100,000 units, twelve died (52.1 per cent). Of ten patients receiving from 200,000 to 420,000 units, two died (20 per cent). These figures would seem to indicate strongly the value of massive doses of serum. On further consideration, however, it is clear that those receiving small total amounts lived but a short time after admission to the hospital. Had their span of treatment been longer, they eventually would have received the massive aggregate doses mentioned. It is because of this fact that statistics indicating the great value of huge doses of serum should not be accepted without further knowledge of their origin. Serum is of value in neutralizing the uncombined tetanus toxin but can be of no aid in removing that already combined with nervous tissue. Much smaller amounts of serum than those generally used are amply sufficient to neutralize the free toxin of the body. In this light it would seem a more rational procedure to give from 30,000 to 60,000 units of serum when the patient is first seen. This dose might be repeated in a week or so, when a decrease of the amount of antitoxin in the tissues has occurred. With the consideration of serum as an adjunct and not a "specific" in the treatment of active tetanus, more attention will be focused on the local lesion and general care of the patient.

Studies of Hypersensitiveness to Emanations of Caddis Flies (Trichoptera): IV. Diagnosis and Treatment of Forty-three Cases of Asthma and Hay Fever

According to Salvatore J. Parlato, Buffalo (*Journal A. M. A.*, March 24, 1934), the caddis fly has a wide distribution in America and Europe. The numerous lakes and rivers in the United States are the habitats of this common fly. Its emanations are made up of scaly epithelium and easily identified hairs. These emanations are readily shed. They are very viable and are found in the air in considerable quantities during the summer months. Allergic symptoms are caused by the inhalation of these fine particles. In a series of 850 allergic patients who were tested during the years 1928-1932 inclusively, forty-three, or 5 per cent, were found to be hypersensitive to the caddis fly. Thirty-two patients received inoculations of the caddis fly extract. The results indicate that specific treatment can be effectively given during as well as before the fly season, although the latter is recommended. A follow up of these patients has shown that the hyposensitization or "desensitization" has endured as long as four years. It is substantially believed that one course of treatment will render a patient permanently free from allergic symptoms. Caddis fly sensitivity should be remembered when one is considering the etiology or the exciting causes of a patient whose asthma and hay fever occur or are worse during the summer months and whose residence or employment brings him in contact with these flies. It is believed that a complete diagnostic study of this group of patients will reveal additional cases of caddis fly hypersensitiveness in other sections of this country and Canada.

Treatment of Chronic Heart Disease By Lowering Metabolic Rate: Necessity For Total Ablation of Thyroid

Harry F. Friedman and Herrman L. Blumgart, Boston (*Journal A. M. A.*, Jan. 6, 1934), irradiated the thyroid in six patients with chronic heart disease as a substitute for surgery or as an adjunct to subtotal thyroidectomy. Roentgen irradiation of the normal thyroid failed to produce any appreciable persistent lowering of the basal metabolic rate. In one case, previously reported, in which a maximum subtotal thyroidectomy had been performed, both roentgen irradiation and a subsequent surgical attempt to remove the remaining fragments of the thyroid tissue were unsuccessful, and the clinical condition was not improved. One patient whose condition remained the same in spite of massive irradiation showed conspicuous improvement coincident with the reduction in the basal metabolic rate when the entire thyroid was removed according to the technic previously described by Berlin. The authors conclude that their failure and that of others to benefit patients by subtotal thyroidectomy, the authors' unsuccessful attempt to remove residual fragments at a subsequent operation and the ineffectiveness of roentgen irradiation on the remaining tissue emphasize the therapeutic importance of removing the entire gland at the time of the first operation. Ample confirmation for this conclusion was obtained by their subsequent experience in some fifty cases of angina pectoris or congestive failure, in all of which the basal metabolic rate remained low after total ablation of the thyroid, and in practically all of which the clinical improvement has been conspicuous.

MEDICAL BOOK NEWS

Edited by TASKER HOWARD, M.D.,

All books for review and communications concerning Book News should be addressed to the Editor of this department at 1313 Bedford Avenue, Brooklyn, New York

August, 1934

CLASSICAL PARAGRAPHS

In 1816 I was consulted by a young woman labouring under general symptoms of diseased heart, and in whose case percussion and the application of the hand were of little avail on account of the great degree of fatness. The other method just mentioned being rendered inadmissible by the age and sex of the patient, I happened to recollect a simple and well-known fact in acoustics, and fancied it might be turned to some use on the present occasion. The fact I allude to is the great distinctness with which we hear the scratch of a pin at one end of a piece of wood on applying our ear to the other. Immediately, on this suggestion, I rolled a quire of paper into a kind of cylinder and applied one end of it to the region of the heart and the other to my ear, and was not a little surprised and pleased to find that I could thereby perceive the action of the heart in a manner much more clear and distinct than I had ever been able to do by the immediate application of the ear. From this moment I imagined that the circumstance might furnish means for enabling us to ascertain the character, not only of the action of the heart, but of every species of sound produced by the motion of all the thoracic viscera and consequently for the exploration of the respiration, the voice, the rhonchus, and perhaps even the fluctuation of fluid extravasated in the pleura or the pericardium.

***Rene Theophile Hyacinthe Laennec:** A Treatise on the Diseases of the Chest and on Mediate Auscultation, Paris, 1818. John Forbes translation, reprinted in Epoch-making Contributions to Medicine, Surgery and the Allied Sciences. W. B. Saunders Co., Philadelphia, 1909.*

REVIEWS

Infections of the Hand

INFECTIONS OF THE HAND. A Guide to the Surgical Treatment of Acute and Chronic Suppurative Processes in the Fingers, Hand and Forearm. By Allen B. Kanavel, M.D. Sixth Edition. Philadelphia, Lea & Febiger, 1933. 552 pages, illustrated. 8vo. Cloth $6.00.

This sixth edition contains 552 pages with 216 engravings. It is printed on excellent paper with clear, easily-read type and is well-bound.

The subjects of the anatomy, the pathology, and the treatment of hand infections in general is essentially the same as was presented in the previous editions. However, many new conditions, such as those from bites, gangrenous infections, injuries from indelible pencils, cattle hair, etc. have been inserted. The most marked improvement in this edition is the manner of presentation of the entire subject. In the new edition, the anatomy and the experimental infections are all grouped together, thus separating them from the clinical studies. These changes make the book far more readable and much more easily understood, and changes it into a textbook which is certainly of far greater value to the student and to the practitioner.

The subject matter dealing with any phase of hand infections is more easily found in the index and is presented in a much more logical manner than was done previously. Proper emphasis is laid upon the more important conditions and the method of treating these. The differential diagnosis between lymphangitis and suppurative tenosynovitis occupies considerable space, largely because these two conditions are confused from a diagnostic standpoint and therefore improperly treated.

The reviewer considers this edition by far the most valuable one from the standpoint of the student, the general practitioner, and the surgeon. If readers of the previous editions have found difficulty in digesting the subject matter, it is suggested that a comparison be made between them and this present one.

MERRILL N. FOOTE.

Benign Tumors in the Third Ventricle of the Brain

BENIGN TUMORS IN THE THIRD VENTRICLE OF THE BRAIN: Diagnosis and Treatment. By Walter E. Dandy, M.D. Springfield, Ill., Charles C. Thomas, [c. 1933.] 171 pages, illustrated. 8vo. Cloth, $5.00.

A very complete and interesting presentation of twenty-one case histories of primary tumors situated within the third ventricle of the brain. These twenty-one cases have been divided into two groups, one containing five examples of colloid cysts and a second comprising sixteen new growths of variable origin and histological structure. The author has stressed the importance of careful ventriculographic interruption as this method of examination is essential for accurate localization of such a lesion. The operative approach depends upon a knowledge of the exact position of the tumor within the third ventricle. No detailed consideration has been given the pathological material. The last chapter has been devoted to the signs and symptoms produced by tumors within the third ven-

tricle. In this discussion the collected cases from the literature have been added to the author's series of twenty-one cases. The monograph is well illustrated.

JEFFERSON BROWDER.

Fussbeschwerden und ihre Behandlung

FUSSBESCHWERDEN UND IHRE BEHANDLUNG. Von Dr. Max Schotte. Wien, Wilhelm Maudrich, 1933. 56 pages illustrated. 8vo. Paper, Rm. 3.

In this monograph we have a discussion of the pathology and treatment of flatfoot. The "arch-support" is analyzed and on the basis of the author's conception a new and original type of support is advocated. The arguments are convincing, the illustrations good.

GEORGE WEBB.

Social Psychology

SOCIAL PSYCHOLOGY. By Abraham Myerson, M.D. New York, Prentice-Hall, Inc., 1934. 640 pages. 8vo. Cloth, $3.50.

As the author indicates in his introduction this work is predicated upon two main points of view. One is that a thorough understanding of the visceral-organic structure of man is necessary in order to understand his psychology and secondly that the individual must be studied in relation to his group. In carrying out this plan the book is divided into four parts. The first is concerned with general social psychology and the second with visceral social psychology. Part three is concerned with the social psychology of the family and part four with the general subject of crime. Such factors as nature and the general environment in relation to man are discussed. The author points out heredity and environment act in common to influence the individual. "The constancy of the hereditary qualities is maintained only in a constant environment, and the environment is continually penetrating, molding and remolding the germ plasm as it does every bit of life."

There is an interesting discussion on the family setup. There are several chapters on the social psychology of the sexual functions. An excellent bibliography is placed at the end of each chapter. The book is well written and should be of value and interest to all practitioners of medicine.

STANLEY S. LAMM.

International Clinics. Vol. 4, 43rd Series, 1933

INTERNATIONAL CLINICS. A Quarterly of Illustrated Clinical Lectures and Especially Prepared Original Articles on Treatment, Medicine, Surgery, Neurology, etc. Volume 4, 43rd Series, 1933. Edited by Louis Hamman, M.D., Philadelphia, J. B. Lippincott Company, 1933. 317 pages. 8vo. Cloth, $3.00.

This volume contains what is practically a symposium on the indications and use of endocrine gland products in the treatment of disease, together with the methods of administration and dosage of these products.

The treatment of obesity, one of the problems of today, is presented in a special article. Hypertension and its relation to cerebral manifestations is reviewed in detail. The subjects of malignancy:—carcinoma in the digestive tract, Paget's disease of the nipple, with its relation to carcinoma in the breast, pigmented moles, with later malignancy—have been carefully given by different voters. This issue of the Clinics is valuable and continues the excellent standard of the volumes established by the editor.

HENRY M. MOSES.

Applied Eugenics

APPLIED EUGENICS. By Paul Popenoe and Roswell H. Johnson. New York, The Macmillan Company, 1933. 429 pages, illustrated. 8vo. Cloth, $2.60.

This volume is a revised edition of the original book published by the same authors in 1918. This revision has not necessitated any great change in the social philosophy, the science, or the technology of eugenics as presented in the first edition, but it has enabled the authors to bring in much new evidence on the subject.

As the original edition was widely used as a college text book, the authors have wisely included in their new edition an excellent list of references, and a glossary.

In Appendix C, teachers have been provided with some suggestions for the development of an interest in eugenics on the part of students.

The subject of eugenics is apt to provoke a smile in many people. Perhaps they would take the matter more seriously if they knew more about it.

This book is most interesting, very readable, and it contains a great deal of information with which we should all be more familiar.

WILLIAM SIDNEY SMITH.

Neuroanatomy

NEUROANATOMY. A Guide for the Study of the Form and Internal Structure of the Brain and Spinal Cord. By J. H. Globus, M.D. Sixth Edition. Baltimore, William Wood and Company, 1934. 240 pages, illustrated. 4to. Cloth, $3.50.

This book is a laboratory guide for medical students in their study of the spinal cord and brain. There has been a definite improvement in each edition of this book but the present, sixth edition, shows the results of long experience in teaching this subject, as well as careful thought as to the important details which the student should know. If the medical student takes pride in filling out the outlines in this guide as he does his dissection and studies the cross-sections of the brain stem, he will have a finished product that he will always be proud of keeping in his library.

ORMAN C. PERKINS.

Surgical Pathology of the Mammary Gland

SURGICAL PATHOLOGY OF THE MAMMARY GLAND. By Arthur E. Hertzler, M.D. Philadelphia, J. B. Lippincott Company, [c. 1933.] 283 pages, illustrated. 8vo. Cloth, $5.00.

After having carefully read Hertzler's Surgical Pathology of the Mammary Gland, the reviewer is constrained to indulge in over enthusiasm. As an exposition of common sense conceptions of the diseases of the breast, with special emphasis on the practical application of pathology in the field, the volume must prove invaluable to the surgeon. Fearless and courageous in the expression of his learnings in the laboratory and clinic, and fortified by extensive as well as comprehensive study of patients, the author presents his subject admirably. One is tempted to quote passages from this monograph, but such quotations would lose their force without the surrounding background. Terse, pithy and clear are the descriptions of pathogenesis, and pathology and their bearing on the victims of breast tumors, and the plasias which so frequently simulate them.

The conservative views of the treatment as discussed are refreshing especially when coming from a surgeon. Too bad that so few surgeons can boast of such a knowledge of pathology on which to base their judgment of how to use the knife, indeed as to whether it shall be used or not!

The illustrations are usually abundant and excellent, representing as they do an immense amount of material of common (not, as one so frequently encounters unusual), interest.

Although not an academic or scientific treatise, probably no book of greater practical value to the surgeon who deals with breast cases has been written.

To the pathologist, it should serve as an excellent reassurance in the difficult field of the diseases of breast pathology.

MAX LEDERER.

Nature and Nurture

NATURE AND NURTURE. By Lancelot Hogben, New York, W. W. Norton & Company, [1933.] 144 pages, 8vo. Cloth, $2.75.

This is an up-to-date book of 144 pages, including an index, which is devoted to the subject of Genetics. There are five chapters covering the medical aspects of genetic principles, applications and limitations of the principle or random mating, consanguineous parentage and the theory of inbreeding, the genetic analysis of familial diseases, the interdependence of nature and nurture and appendices. To students of genetics the book will be a welcome addition to their libraries. To practitioners in general it may be somewhat difficult, especially as it contains considerable mathematics. But it is a modern exposition of newer thoughts along the lines of earlier writers, such as Darwin, Galton, Weismann, Mendel and many others familiar to

all serious students of medicine. It is clearly written in a convincing style and language that is not too technical to be understood. It is a book to be recommended for careful perusal.

J. M. VAN COTT.

Heredity and the Social Problem Group

HEREDITY AND THE SOCIAL PROBLEM GROUP. By E. J. Lidbetter. Volume 1. New York, Longmans, Green & Company, 1933. 160 pages. 4vo. Cloth, $7.50.

In this book the author presents a series of twenty-six pedigrees, together with descriptive and statistical material pertaining to these cases. The families selected were from a poor law area in East London. While no conclusions are drawn from this first volume, the author intimates that too much emphasis has been placed on improvements in the social life of the individual and too little on his stock and his heritage. This work is purely of reference value.

STANLEY S. LAMM.

Medicine—A Voyage of Discovery

MEDICINE—A VOYAGE OF DISCOVERY. By Josef Löbel. M.D. New York, Farrar & Rhinehart, Inc., [c. 1934.] 334 pages. 8vo. Cloth, $3.00.

Dr. Josef Lobel gives us an animated account of what medicine is and how it came to be that way. It is written for laymen and draws frankly on the writings of certain other popular authors. Most intelligent laymen are fascinated by this sort of information, which bears so intimately on their own well being and that of those who are close to them. Such readers will find this voyage of discovery an exciting adventure. The author dips into biology, heredity, the structure and functions of tissues, bacteriology and its relation to sickness, antisepsis and asepsis, and the wonders of modern surgery, cellular versus humoral pathology, endocrinology, and finally modern psychology and the effect of mind upon the body. He enters into each controversy with enthusiasm and proves his contention "orthodox with apostolic blows and knocks" first on one side and then on the other. In the end he satisfactorily pieces together the panels that form the structure of modern medicine, and shows how important is each part. Incidentally, his really brilliant discourse on personality suggests to the medical reader the vital fault in the systems of wholesale medicine that are being urged upon us.

Adequate medical editorial supervision would have prevented a few minor errors in the translation.

The publishers have decorated each chapter head with the winged rod and fighting serpents of the caduceus of Hermes, instead of the one serpent twined about the healing staff of Aesculapius. This may have come about through the use of the caduceus as the insignia of the Medical Department of the United States Army. The staff of Aesculapius appeared on the original shield of this department, adopted in Civil War times, and why the sign of the god of messengers and ambassadors, of thieves, of prophets, and of gamblers, the escort of the dead to Hades, should have appeared as the sign, first of hospital orderlies in 1881, and finally of the whole Medical Department in 1901, remains to be told. The association has honored the caduceus in any event.*

Dr. Lobel's book is quick reading and fascinating reading. It should be instructive to the patient and help to orient those of us in medical work who may have encountered so many trees that the forest is getting a bit indistinct.

TASKER HOWARD.

The Hospital Manual of Operation

THE HOSPITAL MANUAL OF OPERATION. By Warren P. Morrill, M.D. New York, Lakeside Publishing Company, [c. 1934.] 315 pages, illustrated. 8vo. Cloth, $3.00.

Hospital administrators, trustees, executives and members of Medical and Nursing Staffs will find much valuable information in Dr. Morrill's Manual of 315 pages.

This book of 15 chapters covers the field of hospital administration briefly and concisely and it is surprising how much sound information is contained within its covers.

Especially interesting are the complete bibliographies at the end of each chapter and the general bibliography of publications at the end of the book.

Anyone interested in hospital administration should have this book. Written by a recognized authority there is no book on hospital subjects which can quite compare with it.

ADAM EBERLE.

Bergey's Manual of Determinative Bacteriology

BERGEY'S MANUAL OF DETERMINATIVE BACTERIOLOGY. By David H. Bergey. Fourth Edition. Baltimore, Williams & Wilkins Company, 1934. 664 pages. 8vo. Cloth, $6.00.

Bacteriologists and those interested in related fields of scientific work are acquainted with the fact that all the recently published text books on bacteriology have adopted Bergey's Manual as a standard for the classification of bacteria. This in itself makes this book highly desirable for one's library.

On reviewing the last edition, one will readily admit that it is deserving of such a singular honor. It is a book not only by Bergey, but an accumulation of material from various bacteriologists who have been invited to submit suggestions for, additions to, and revisions of the previous editions. This has resulted in an addition of one hundred pages to the latest edition. This increase in volume was in part necessitated by the discovery of fifty new species. Two new genera (Brucella and Listerella) have been recognized in the Tribe Bacterieae. The order Myxobacteriales, Genus Rhizobium, Genus Leuconostoc, and Genera Escherichia and Aerobacter, have also been revised. Another valuable feature which appears on this new edition is that term endings and spelling conform to the latest international rules of orthography. The book contains the most nearly complete list of scientific names which can be found in any work on this subject. A new key for the Genus Lactobacillus has been prepared by Dr. Pederson.

In short, the 4th edition is an excellent improvement on an already excellent text.

SILIK H. POLAYES.

Sex Habits

SEX HABITS. A Vital Factor in Well-being. By A. Buschke, M.D. & F. Jacobson, M.D. Translated from the German by Eden and Cedar Paul. New York, Emerson Books, Inc, Inc. [c. 1933.] 204 pages. 12mo. Cloth, $2.50.

This excellent volume is written by two German physicians who are eminently fitted to write on Sex. The book is medically correct, and yet, it is written in simple language which the laity can understand.

In general, the anatomy and physiology of the male and female reproductive organs are discussed, and then the authors go on to discuss normal and some of the abnormal aspects of sex life.

We think this is a very well-balanced book. It is full of valuable information which all married people should know, both for their own information and to enable them to impart necessary information to their children.

WILLIAM SIDNEY SMITH.

International Clinics—Vol. I, 44th Series, 1934

INTERNATIONAL CLINICS. A Quarterly of Illustrated Clinical Lectures and Especially Prepared Original Articles on Treatment, Medicine, Surgery, Neurology, etc. Volume I, 44th Series, 1934. Edited by Louis Hamman, M.D. Philadelphia, J. B. Lippincott Company, [c. 1934.] 320 pages, illustrated. 8vo. Cloth, $3.00.

Before discussing some of the interesting articles in this issue of International Clinics, it will be of interest to the practitioner to learn that an unusual type of case study system has been inaugurated which reports two problem cases from which the reader is requested to supply a diagnosis or to request further laboratory or special clinical data for which postal cards are supplied. This system will no doubt enhance the popularity of this clinic series.

**Compare Camac—C. N. B. The Greek Emblem in Medicine. In his: Imhotep to Harvey. N.Y., Hoeber, 1931.*

In the text proper we find an enlightening article on the role of the vegetative nervous system in gastro-intestinal disease. After reviewing the two systems of fibers which constitute this dual system, Dr. Weiss maintains that while in health "both the autonomic and sympathetic systems are in balanced tonus," one frequently encounters functional disorders featuring mixed stimulations of these respective systems. Dr. Weiss reports cases showing vagotonic effects, such as vomiting, belching, dysphagia, but combined with sympathetic mydriasis in which the administration of atropine (by injections) has cleared up the symptoms and produced normal constriction of the pupils.

The treatment of cardiac and renal edema is featured by two distinct types of treatment: one based on providing a diet of neutral ash to which acid-producing salts are added to counteract the retention of the alkaline sodium radical; the other, designed to increase the sodium and potassium elements in the diet. Neither of these systems are reliable in their results and a good deal of juggling is often necessary as one may judge from perusing the case reports.

There is a symposium on lead poisoning in children with a warning to guard them against painted toys and lead pencils. These represent but a fraction of what the reader may find in this valuable number.

EMANUEL KRIMSKY.

Allergy in General Practice

ALLERGY IN GENERAL PRACTICE. By Samuel M. Feinberg, M.D. Philadelphia, Lea & Febiger, 1934. 339 pages, illustrated. 8vo. Cloth, $4.50.

This book is designed for the use of the general practitioner. In it the author attempts to present the practical aspects of the subject of allergy, in a manner devoid of too much detail and technicality. Most of the book is devoted to the diagnosis and treatment of asthma and hay fever, but the other allergies are also dealt with briefly.

In one chapter there is a tabulation of the various excitants of allergy, and a description of their common contacts with the patient. Lists are presented of the various substances used in testing and the frequency with which they act as offenders. Various diets and recipes are included for different types of food-sensitive cases.

A special chapter, which is devoted to a complete survey of the botanical considerations in hay fever, is skilfully presented by B. Durham.

The book is too technical for the use of the patient and is not complete enough for use as a reference book. It will serve its best purpose as a practical handy book in allergy for the physician, and in this respect should well answer the purpose of its author.

MATTHEW WALZER.

Essentials of Hospital Practice

ESSENTIALS OF HOSPITAL PRACTICE. By Royall M. Calder, M.D. Durham, N. C., Duke University Press, 1934. 262 pages. 12mo. Fabrikoid, $2.75.

Dr. Calder offers a new hospital manual which is small enough to easily fit in the pocket, but which offers some 250 pages of intensely practical information. In the preface he states that "it is assumed that the young physician brings to his position as interne a thorough training in the fundamentals of medicine. If he has such a foundation, this volume, it is believed, will be of service as a reminder of practical facts that may have escaped his attention or memory; if he is not so trained, the aim of this book will be defeated, for there is no satisfactory short cut to an art so intricate as the practice of medicine." Besides directions for history taking and physical examinations, the book describes methods of collecting specimens, most of the common laboratory tests, a description of such medical procedures as blood transfusion, thoracentisis, etc., as well as directions for pre- and post-operative care, and how to meet various medical emergencies that the interne is likely to encounter. There is, in addition, a drug list with short notes on uses and doses. The doses are regularly given in the metric system, and only sometimes in the older form.

TASKER HOWARD.

BOOKS RECEIVED

Books received for review are acknowledged promptly in this column; we assume no other obligation in return for the courtesy of those sending us the same. In most cases, review notes will be promptly published shortly after acknowledgement of receipt has been made in this column.

INTERNATIONAL CLINICS. A Quarterly of Illustrated Clinical Lectures and Especially Prepared Original Articles on Treatment, Medicine, Surgery, Neurology, etc. Vol. 2, 44th Series. 1934. Edited by Louis Hamman, M.D. Philadelphia, J. B. Lippincott Company, 1934. 317 pages. 8vo. Cloth, $3.00.

SURVEY OF PUBLIC HEALTH NURSING. Administration and Practice. By the National Organization for Public Health Nursing. Katharine Tucker, General Director, Hortense Hilbert, Assistant Director for the Survey. New York, The Commonwealth Fund, 1934. 262 pages. 8vo. Cloth, $2.00.

ENGLISH-GERMAN and GERMAN-ENGLISH MEDICAL DICTIONARY. By Joseph R. Waller, M.D., and Moritz Kaatz, M.D. Fourth Edition, First Part. English-German. Leipzig and Vienna, Franz Deuticke, 1934. 201 pages. 16mo. Cloth, M. 6.

DIE PERIODISCHE FRUCHTBARKEIT UND UNFRUCHTBARKEIT DES WEIBES. Der weg zur Natürlichen Geburtenregelung. By Prof. Dr. Hermann Knaus. Wien, Wilhelm Maudrich, 1934. 147 pages, illustrated. 8vo. Cloth, RM. 15.

THE BIOLOGY OF BACTERIA. An introduction to General Microbiology. By Arthur T. Henrici, M.D. Boston and New York, D. C. Heath & Company [c. 1934.] 472 pages, illustrated. 8vo. Cloth, $3.60.

THE INTERNATIONAL MEDICAL ANNUAL. A Year Book of Treatment and Practitioner's Index. Fifty-second Year. Edited by H. Letherby Tidy, M.D., and A. Rendle Short, M.D. Baltimore, William Wood & Company, 1934. 579 pages, illustrated. 8vo. Cloth, $6.00.

COLLECTED PAPERS OF THE MAYO CLINIC AND THE MAYO FOUNDATION. Volume 25, 1933. Edited by Mrs. Maud H. Mellish-Wilson and Richard M. Hewitt, M.D. Philadelphia, W. B. Saunders Company, 1934. 1230 pages, illustrated 8vo.

SURGERY OF A GENERAL PRACTICE. By Arthur E. Hertzler, M.D., and Victor E. Chesky, M.D. St. Louis, C. V. Mosby Company, 1934. 602 pages, illustrated. 8vo. Cloth, $10.00.

TUBERCULOSIS IN THE CHILD AND THE ADULT. By Francis M. Poettenger, M.D. St. Louis, C. V. Mosby Company, 1934. 611 pages, illustrated. 8vo. Cloth, $8.50.

SPINAL ANESTHESIA. Technic and Clinical Application. By George R. Vehrs, M.D. St. Louis, C. V. Mosby Company, 1934. 269 pages, illustrated. 8vo. Cloth, $5.50.

WHO SHALL SURVIVE? A New Approach to the Problem of Human Inter-relations. By J. L. Moreno, M. D. Washington, D. C., Nervous and Mental Disease Publishing Company, 1934. 440 pages, illustrated. 8vo. (Nervous and Mental Disease Monograph Series No. 58).

Convulsions in Childhood

M. G. PETERMAN, Milwaukee (*Journal A. M. A.*, May 26, 1934), states that a revised classification of convulsions in 500 children demonstrates the basic diagnosis as epilepsy in 33 per cent of the cases, onset of acute infection in 22.8 per cent, cerebral birth injury or residue in 15.4 per cent, spasmophilia in 13.6 per cent, miscellaneous causes in 8.8 per cent and cause unknown in 6.4 per cent. There was no recognized case of cerebral sinus thrombosis, allergic basis, hypoglycemia or hyperinsulinism in this series. Of the convulsions, 6.6 per cent occurred in the first month of life, 13.6 per cent in the second five months of life, 40.2 per cent between 6 and 36 months of age, 26.4 per cent between 3 and 10 years of age and 6.4 per cent between 10 and 15 years of age. In 6.8 per cent of the cases the age of the child at the time of the first convulsion could not be obtained.